



STATE OF ALABAMA

DEPARTMENT OF FINANCE  
DIVISION OF PURCHASING

INVITATION TO BID

INVITATION TO BID NO: 10-X-2218012

REQ. AGENCY : 999999  
PURCHASING DIVISION  
AGENCY REQ. NO. :  
T-NUMBER : T226  
DATE ISSUED : 05/11/10  
VENDOR NO. :  
VENDOR PHONE NO. :  
SNAP REQ. NO. : 1439212  
BUYER NAME : CRIST WATTS

FOR: RIGHT-OF-WAY MOWERS AND CUTTERS

BUYER PHONE NO. : (334) 242-4291-  
PURCHASING PHONE NO: (334) 242-7250

BID MUST BE RECEIVED BEFORE:  
DATE: 06/14/10 TIME: 5:00 PM

BIDS WILL BE PUBLICLY OPENED:  
DATE: 06/15/10 TIME: 10:00 AM

TO BE COMPLETED BY VENDOR

INFORMATION IN THIS SECTION SHOULD BE PROVIDED, AS APPROPRIATE. BID RESPONSE  
MUST BE IN INK OR TYPED WITH ORIGINAL SIGNATURE AND NOTARIZATION.

1. DELIVERY: CAN BE MADE \_\_\_\_\_ DAYS OR \_\_\_\_\_ WEEKS AFTER RECEIPT OF ORDER
2. TERMS: \_\_\_\_\_(DISCOUNTS ARE TAKEN WITHOUT REGARD TO DATE OF PAYMENT.)
3. PRICE VALID FOR ACCEPTANCE WITHIN \_\_\_\_\_ DAYS.
4. VENDOR QUOTATION REFERENCE NUMBER, IF ANY: \_\_\_\_\_  
(THIS NUMBER WILL APPEAR ON THE PURCHASE ORDER.)
5. E-MAIL ADDRESS: \_\_\_\_\_  
INTERNET WEBSITE: \_\_\_\_\_
6. GENERAL CONTRACTOR'S LICENSE NO: \_\_\_\_\_  
TYPE OF G.C. LICENSE: \_\_\_\_\_

\*\*\*\*\* IMPORTANT NOTE: \*\*\*\*\*

BIDDERS MUST COMPLY WITH ALL "BID RESPONSE INSTRUCTIONS" ON PAGE 2, TO INCLUDE  
ITEM 7 - COPY REQUIREMENT.

RETURN INVITATION TO BID:

US MAIL

STATE OF ALABAMA  
DEPARTMENT OF FINANCE  
DIVISION OF PURCHASING  
P O BOX 302620  
MONTGOMERY, AL 36130-2620

COURIER

STATE OF ALABAMA  
DIVISION OF PURCHASING  
RSA UNION BUILDING  
100 N. UNION ST., SUITE 192  
MONTGOMERY, AL 36104

SIGNATURE AND NOTARIZATION REQUIRED

I HAVE READ THE ENTIRE BID AND AGREE TO FURNISH EACH ITEM OFFERED AT THE PRICE QUOTED.  
I HERBY AFFIRM I HAVE NOT BEEN IN ANY AGREEMENT OR COLLUSION AMONG BIDDERS IN  
RESTRAINT OF FREEDOM OF COMPETITION BY AGREEMENT TO BID AT A FIXED PRICE OR TO  
REFRAIN FROM BIDDING.

SWORN TO AND

FEIN OR SSN

AUTHORIZED SIGNATURE (INK)

SUBSCRIBED BEFORE ME THIS

COMPANY NAME

TYPE/PRINT AUTHORIZED NAME

\_\_\_\_\_ DAY OF \_\_\_\_\_

MAIL ADDRESS

TITLE

NOTARY PUBLIC

CITY, STATE, ZIP

TOLL FREE NUMBER

TERM EXP: \_\_\_\_\_

PHONE INCLUDING AREA CODE

FAX NUMBER

STANDARD TERMS & CONDITIONS

VENDOR NAME :

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AUTHORITY:

THE DEPARTMENT OF FINANCE CODE OF ADMINISTRATIVE PROCEDURE, CHAPTER 355-4-1 EFFECTIVE DECEMBER 20, 2001 IS INCORPORATED BY REFERENCE AND MADE A PART OF THIS DOCUMENT. TO RECEIVE A COPY CALL (334)242-7250, OR OUR WEBSITE WWW.PURCHASING.ALABAMA.GOV .

INFORMATION AND ASSISTANCE TO MINORITY AND WOMEN-OWNED BUSINESSES IN ACQUIRING M/WBE CERTIFICATION MAY BE OBTAINED FROM THE OFFICE OF MINORITY BUSINESS ENTERPRISE, 1-800-447-4191.

BID (ITB) RESPONSE INSTRUCTIONS

REV: 01/14/10

1. TO SUBMIT A RESPONSIVE BID, READ THESE INSTRUCTIONS, ALL TERMS, CONDITIONS AND SPECIFICATIONS.
2. BID ENVELOPES/PACKAGES/BOXES MUST BE IDENTIFIED ON FRONT, PREFERABLY LOWER LEFT CORNER AND BE VISIBLE WITH THE BID NUMBER AND OPENING DATE. EACH INDIVIDUAL BID (IDENTIFIED BY A UNIQUE BID NUMBER) MUST BE SUBMITTED IN A SEPARATE ENVELOPE. RESPONSES TO MULTIPLE BID NUMBERS SUBMITTED IN THE SAME ENVELOPE/COURIER PACKAGE, THAT ARE NOT IN SEPARATE ENVELOPES PROPERLY IDENTIFIED, WILL BE REJECTED. THE DIVISION OF PURCHASING DOES NOT ASSUME RESPONSIBILITY FOR LATE BIDS FOR ANY REASON INCLUDING THOSE DUE TO POSTAL, OR COURIER SERVICE. BID RESPONSES MUST BE IN THE DIVISION OF PURCHASING OFFICE PRIOR TO THE "RECEIVE DATE AND TIME" INDICATED ON THE BID.
3. BID RESPONSES (PAGE 1, PRICE SHEET AND ADDENDUMS (WHEN SIGNATURE IS REQUIRED)) MUST BE IN INK OR TYPED ON THIS DOCUMENT. OR EXACT FORMAT WITH SIGNATURES BEING HANDWRITTEN ORIGINALS IN INK (PERSON SIGNING BID, NOTARY, AND NOTARY EXPIRATION), OR THE BID WILL BE REJECTED. UNLESS INDICATED IN THE BID, ALL PRICE PAGES MUST BE COMPLETED AND RETURNED. IF AN ITEM IS NOT BEING BID, IDENTIFY IT AS NB (NO-BID). PAGES SHOULD BE SECURED. THE DIVISION OF PURCHASING DOES NOT ASSUME RESPONSIBILITY FOR MISSING PAGES. FAXED BID RESPONSES WILL NOT BE ACCEPTED.
4. THE UNIT PRICE ALWAYS GOVERNS REGARDLESS OF THE EXTENDED AMOUNT. A UNIT PRICE CHANGE ON A LINE MUST BE INITIALED BY THE PERSON SIGNING THE BID, OR THAT LINE WILL BE REJECTED. THIS INCLUDES A CROSS-OUT, STRIKE-OVER, INK-OVER, WHITE-OUT, ERASURE, OR ANY OTHER METHOD CHANGING THE PRICE.
5. A "NO BID" MUST BE RETURNED TO REMAIN ON A CLASS/SUBCLASS. RETURN PAGE 1 OR NOTIFICATION PAGE MARKED "NO-BID". IDENTIFY IT ON THE ENVELOPE AS A "NO-BID". FAILING TO RESPOND TO 3 ITB'S WITHIN THE SAME CLASS/SUBCLASS WILL AUTOMATICALLY PURGE THE VENDOR FROM THAT CLASS/SUBCLASS. RESPONDING WITH 6 "NO-BIDS" WITHIN THE SAME CLASS/SUBCLASS WILL AUTOMATICALLY PURGE THE VENDOR FROM THAT CLASS/SUBCLASS. A "NO-BID" RECEIVED LATE IS CONSIDERED A NO RESPONSE.
6. THE DIVISION OF PURCHASING IS NOT RESPONSIBLE FOR MISINTERPRETATION OF DATA FAXED FROM THIS OFFICE.
7. THE DIVISION OF PURCHASING REQUIRES AN ORIGINAL AND A MINIMUM OF ONE COMPLETE EXACT COPY (TO INCLUDE SIGNATURE AND NOTARY) OF THE INVITATION-TO-BID RESPONSE. THE ORIGINAL AND THE COPY SHOULD BE SUBMITTED TOGETHER AS A BID PACKAGE. FAILURE TO MARK RESPONSES AS "ORIGINAL" AND/OR "COPY" COULD RESULT IN THE ENTIRE BID RESPONSE BEING REJECTED.
8. AN IMPROPERLY SUBMITTED BID, LATE BID, OR BID THAT IS CANCELLED ON OR BEFORE THE OPENING DATE WILL BE HELD FOR 90 DAYS AND THEN DESTROYED. THE BID MUST BE RETRIEVED DURING REGULAR WORK HOURS, MONDAY - FRIDAY, EXCEPT STATE HOLIDAYS. AFTER THE BID IS DESTROYED, THE DIVISION OF PURCHASING ASSUMES NO RESPONSIBILITY FOR THE DOCUMENT.

DISQUALIFIED/CANCELLED BID

BIDS THAT ARE IMPROPERLY SUBMITTED OR RECEIVED LATE WILL BE A RESPONSE FOR RECORD, BUT WILL NOT BE RETURNED OR A NOTIFICATION MAILED.

THE FOLLOWING IS A PARTIAL LIST WHEREBY A BID RESPONSE WILL BE DISQUALIFIED:

BID NUMBER NOT ON FACE OF ENVELOPE/COURIER PACKAGE/BOX  
RESPONSES TO MULTIPLE BID NUMBERS IN SAME ENVELOPE NOT PROPERLY IDENTIFIED  
BID RECEIVED LATE  
BID NOT SIGNED/NOT ORIGINAL SIGNATURE  
BID NOT NOTARIZED/NOT ORIGINAL SIGNATURE OF NOTARY AND/OR NO NOTARY EXPIRATION  
NOTARIZED OWN SIGNATURE  
REQUIRED INFORMATION NOT SUBMITTED WITH BID  
FAILURE TO SUBMIT THE ORIGINAL BID AND A COMPLETE EXACT COPY

CERTIFICATION PURSUANT TO ACT NO. 2006-557

ALABAMA LAW (SECTION 41-4-116, CODE OF ALABAMA 1975) PROVIDES THAT EVERY BID SUBMITTED AND CONTRACT EXECUTED SHALL CONTAIN A CERTIFICATION THAT THE VENDOR, CONTRACTOR, AND ALL OF ITS AFFILIATES THAT MAKE SALES FOR DELIVERY INTO ALABAMA OR LEASES FOR USE IN ALABAMA ARE REGISTERED, COLLECTING, AND REMITTING ALABAMA STATE AND LOCAL SALES, USE, AND/OR LEASE TAX ON ALL TAXABLE SALES AND LEASES INTO ALABAMA. BY SUBMITTING THIS BID, THE BIDDER IS HEARBY CERTIFYING THAT THEY ARE IN FULL COMPLIANCE WITH ACT NO. 2006-557, THEY ARE NOT BARRED FROM BIDDING OR ENTERING INTO A CONTRACT PURSUANT TO 41-4-116, AND ACKNOWLEDGES THAT THE AWARDING AUTHORITY MAY DECLARE THE CONTRACT VOID IF THE CERTIFICATION IS FALSE.

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#### INTENT TO AWARD

EFFECTIVE MAY 1, 2008, THE STATE OF ALABAMA - DIVISION OF PURCHASING WILL ISSUE AN 'INTENT TO AWARD' BEFORE A FINAL AWARD IS MADE. THE 'INTENT TO AWARD' WILL CONTINUE FOR A PERIOD OF FIVE (5) CALENDAR DAYS, AFTER WHICH A PURCHASE ORDER WILL BE PRODUCED. UPON FINAL AWARD, ALL RIGHTS TO PROTEST ARE FORFEITED. A DETAILED EXPLANATION OF THIS PROCESS MAY BE REVIEWED IN THE ALABAMA ADMINISTRATIVE CODE - CHAPTER 355-4-1(14).

#### ALTERNATE BID RESPONSE

UNLESS STATED ELSEWHERE IN THIS INVITATION-TO-BID (ITB) THE STATE OF ALABAMA WILL ACCEPT AND EVALUATE ALTERNATE BID SUBMITTALS ON ANY ITB'S. ALTERNATE BID RESPONSES WILL BE EVALUATED ACCORDING TO THE REQUIREMENTS AS ALL OTHER RESPONSES TO THIS ITB.

#### INTERNET WEBSITE LINK'S

INTERNET AND/OR WEBSITE LINKS WILL NOT BE ACCEPTED IN BID RESPONSES AS A MEANS TO SUPPLY ANY REQUIREMENTS STATED IN THIS ITB (INVITATION-TO-BID).

#### PRODUCT DELIVERY, RECEIVING AND ACCEPTANCE

IN ACCORDANCE WITH THE UNIVERSAL COMMERCE CODE (CODE OF ALABAMA, TITLE 7), AFTER DELIVERY, THE STATE OF ALABAMA HAS THE RIGHT TO INSPECT ALL PRODUCTS BEFORE ACCEPTING. THE STATE WILL INSPECT PRODUCTS IN A REASONABLE TIMEFRAME. SIGNATURE ON A DELIVERY DOCUMENT DOES NOT CONSTITUTE ACCEPTANCE BY THE STATE. THE STATE WILL ACCEPT PRODUCTS ONLY AFTER SATISFACTORY INSPECTION.

#### SALES TAX EXEMPTION

PURSUANT TO THE CODE OF ALABAMA, 1975, TITLE 40-23-4 (A) (11), THE STATE OF ALABAMA IS EXEMPT FROM PAYING SALES TAX. AN EXEMPTION LETTER WILL BE FURNISHED UPON REQUEST.

#### INVOICES

INQUIRIES CONCERNING PAYMENT AFTER INVOICES HAVE BEEN SUBMITTED ARE TO BE DIRECTED TO THE RECEIVING AGENCY, NOT THE DIVISION OF PURCHASING

#### BID RESPONSES AND BID RESULTS

UNEVALUATED BID RESPONSES (NOT BID RESULTS) ARE AVAILABLE ON OUR WEB SITE AT WWW.PURCHASING.ALABAMA.GOV. BID RESULTS WILL BE MADE AVAILABLE FOR REVIEW IN THE DIVISION OF PURCHASING OFFICE, BUT ONLY AFTER THE BID HAS BEEN AWARDED. WE DO NOT FAX OR MAIL COPIES OF BID RESULTS. IF A VENDOR WISHES TO REVIEW BID RESULTS IN OUR OFFICE, THEY SHOULD FAX THEIR REQUEST TO REVIEW THE BID TWO DAYS IN ADVANCE TO THE "BID REVIEW CLERK" AT (334) 242-4419. BE SURE TO REFERENCE THE BID NUMBER.

#### FOREIGN CORPORATION - CERTIFICATE OF AUTHORITY

ALABAMA LAW PROVIDES THAT A FOREIGN CORPORATION (AN OUT-OF-STATE COMPANY/FIRM) MAY NOT TRANSACT BUSINESS IN THE STATE OF ALABAMA UNTIL IT OBTAINS A CERTIFICATE OF AUTHORITY FROM THE SECRETARY OF STATE. SECTION 10-2B-15.01, CODE OF ALABAMA 1975. TO OBTAIN FORMS FOR A CERTIFICATE OF AUTHORITY, CONTACT THE SECRETARY OF STATE, CORPORATIONS DIVISION, (334) 242-5324. THE CERTIFICATE OF AUTHORITY DOES NOT KEEP THE VENDOR FROM SUBMITTING A BID.

#### BID IDENTIFICATION

REFERENCE PAGE 2, ITEM 2. DUE TO THE POSTAL SERVICE PUTTING BAR CODE LABELS ON ENVELOPES, IT CONCEALS THE BID NUMBER AND DATE IF THE VENDOR HAS WRITTEN THEM OTHER THAN THE LOWER LEFT CORNER, THEREFORE THE BID WOULD BE REJECTED FOR NOT BEING PROPERLY IDENTIFIED.

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MINIMUM ORDER AMOUNT:  
MINIMUM ORDER AMOUNT IS NOT APPLICABLE TO THIS INVITATION TO BID.  
MINIMUM ORDER AMOUNT WILL BE ONE OF ANY UNIT OF MEASURE UNLESS  
OTHERWISE INDICATED.

AWARD:  
AWARD WILL BE BY INDIVIDUAL ITEM, OR GROUPS OF ITEMS (IF INDICATED)  
TO THE LOWEST RESPONSIBLE BIDDER MEETING ALL SPECIFICATIONS.

DELIVERY TIME FRAME:  
DELIVERY ON ALL CUTTERS TO BE 90 DAYS, TRACTOR MOUNTED FLAIL UNITS  
180 DAYS, AND TRACTOR MOUNTED BOOM CUTTERS 60 DAYS AFTER RECEIPT OF  
TRACTOR FROM END USER.

ALL INVOICES ARE TO BE BILLED IN ARREARS, TO THE "BILL TO" ADDRESS.

ALL BOOM MOWERS ARE TO BE MOUNTED ON ORDERING AGENCY TRACTOR. PRIOR  
TO PLACING AN ORDER THE ORDERING AGENCY MUST COORDINATE TRACTOR SPECS  
WITH BOOM MOWER VENDOR TO ENSURE COMPATIBILITY.

ORDERING AGENCY WILL DELIVER TRACTOR TO ALABAMA LOCATED VENDOR. THE  
VENDOR WILL DELIVER THE UNIT TO THE ORDERING AGENCY LOCATION WHEN  
MOWER IS MOUNTED, CHECKED OVER, AND READY FOR OPERATION. THE VENDOR  
WILL PROVIDE FOUR (4) HOURS OF TRAINING AT OR NEAR THE TIME OF  
DELIVERY.

ONE COPY OF THE MANUFACTURER'S WARRANTY AND TWO (2) SETS  
OF THE MAINTENANCE / OPERATIONS MANUALS ARE REQUIRED TO BE SENT WITH  
DELIVERY OF EACH CUTTER AND/OR TRACTOR-MOUNTED CUTTER.

F.O.B. DESTINATION:  
F.O.B. DESTINATION IS THE LOCATION WHERE MERCHANDISE IS DELIVERED AND  
UNLOADED ON A RECEIVING DOCK, IF AVAILABLE, TO ANY STATE AGENCY AND  
THE CHANGE OF TITLE TAKES PLACE. VENDOR IS LIABLE FOR FREIGHT CHARGES,  
RISK OF LOSS OR DAMAGE TO THE MERCHANDISE UP TO THE DESTINATION.  
UNITS ARE TO BE SHIPPED ON FLAT BED TRUCKS AND IT WILL BE THE  
RESPONSIBILITY OF THE RECEIVING AGENCY TO HAVE CAPABILITY OF  
UNLOADING THE MERCHANDISE.

PRODUCT LIABILITY INSURANCE:  
THE CONTRACT VENDORS AND/OR MANUFACTURERS MUST MAINTAIN A TEN MILLION  
DOLLAR (\$10,000,000.00) PRODUCT LIABILITY POLICY FOR THE DURATION OF  
EACH TWELVE (12) MONTH CONTRACT PERIOD AND FOR TWELVE (12) MONTHS  
AFTER THE EXPIRATION DATE OF THE LAST TWELVE (12) MONTH CONTRACT  
PERIOD.

A COPY OF THE INSURANCE POLICY SHOULD ACCOMPANY YOUR BID, AND THE BID  
COPY PER ITEM NUMBER 7 ON PAGE 2 OF THIS ITB. A COPY OF THE REQUIRED  
INSURANCE MUST BE SUBMITTED TO THE STATE OF ALABAMA WITHIN FIVE (5)  
BUSINESS DAYS FROM RECEIPT OF REQUEST. FAILURE TO PROVIDE PROOF OF THE  
REQUIRED INSURANCE AS OUTLINED ABOVE WILL RESULT IN THE REJECTION OF  
YOUR BID.

CONTRACT PERIOD:  
ESTABLISH A 12 MONTH CONTRACT WITH AN OPTION TO EXTEND FOR A SECOND,  
THIRD, FOURTH, AND FIFTH 12 MONTH PERIOD WITH THE SAME PRICING, TERMS  
AND CONDITIONS. THE SECOND, THIRD, FOURTH, OR FIFTH 12 MONTH PERIOD,  
IF AGREED BY BOTH PARTIES, WOULD BEGIN THE DAY AFTER THE FIRST,  
SECOND, THIRD, OR FOURTH 12 MONTH PERIOD EXPIRES. ANY SUCCESSIVE  
EXTENSION MUST HAVE WRITTEN APPROVAL OF BOTH THE STATE AND VENDOR NO  
LATER THAN 30 DAYS PRIOR TO EXPIRATION OF THE PREVIOUS 12 MONTH  
PERIOD.

AT THE RENEWAL OF EACH CONTRACT PERIOD, THE CONTRACT VENDOR AGREES  
TO SUPPLY THE CURRENT YEAR'S MODEL WHICH MUST MEET OR EXCEED ALL  
SPECIFICATIONS FOR THAT MOWER/CUTTER.

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DESCRIPTIVE LITERATURE:

THE MANUFACTURER AND MODEL NUMBERS REFERENCED PROVIDE A LEVEL OF QUALITY, AND UNLESS OTHERWISE SPECIFIED, ARE NOT RESTRICTIVE. ALL VENDORS BIDDING ON THIS ITB, REGARDLESS OF MANUFACTURER OR MODEL NUMBER BEING BID, MUST PROVIDE COMPLETE MANUFACTURER DESCRIPTIVE/ TECHNICAL LITERATURE FOR EVALUATION WITH THEIR BID, AND THEIR BID COPY PER ITEM 7 ON PAGE 2. REFERENCE TO LITERATURE WITH A PREVIOUS BID WILL NOT SATISFY THIS REQUIREMENT. FAILURE TO PROVIDE THE REQUIRED LITERATURE WILL RESULT IN YOUR BID ON THAT ITEM TO BE REJECTED. IF REQUESTED A PHYSICAL INSPECTION AND OPERATIONAL EVALUATION MAY ALSO BE REQUIRED AND MUST BE PROVIDED WITHIN FIFTY (100) MILES OF MONTGOMERY, ALABAMA WITHOUT COST OR OBLIGATION TO THE STATE OF ALABAMA.

DESCRIPTIVE LITERATURE, IN THIS CASE, IS DEFINED AS MANUFACTURER'S SPEC SHEET, MANUFACTURER'S BROCHURE WITH SPECIFICATIONS, AND MANUFACTURER'S PAMPHLET WITH SPECIFICATIONS FOR THAT SPECIFIC MOWER/CUTTER. DESCRIPTIVE LITERATURE MUST BE IDENTIFIED WITH THE LINE NUMBER FOR THAT ITEM ON THE TOP OF THE SPEC SHEET, OR ON THE TOP FRONT OF THE BROCHURE OR PAMPHLET. MANUFACTURER'S BUYING GUIDES, EQUIPMENT GUIDES, AND EQUIPMENT CATALOGS WILL NOT BE ACCEPTED. FAILURE TO PROVIDE THE DESCRIPTIVE LITERATURE AS OUTLINED ABOVE WILL RESULT IN YOUR BID ON THAT LINE ITEM TO BE REJECTED.

TITLE FEE/WARRANTY:

ALL ITEMS WILL COME EQUIPPED WITH ALL STANDARD EQUIPMENT AND ACCESSORIES PLUS OPTIONS AS SHOWN AND ALL EQUIPMENT WILL BE FACTORY INSTALLED UNLESS OTHERWISE INDICATED AND AUTHORIZED.

WARRANTY CARD AND SERVICE POLICY MUST ACCOMPANY ITEM WHEN DELIVERED WITH WARRANTY TO GO INTO EFFECT WHEN ITEM IS PLACED IN SERVICE.

FIRM PRICING:

ALL PRICES QUOTED MUST BE FIRM FOR A PERIOD OF ONE (1) YEAR FROM THE VENDOR'S NOTIFICATION OF AWARD.

AT THE RENEWAL OF EACH CONTRACT PERIOD, UP TO A 5% PRICE INCREASE MAY BE ALLOWED, IF AGREED UPON BY BOTH THE CONTRACT VENDOR AND THE STATE OF ALABAMA. THE REQUEST FOR A PRICE INCREASE MUST BE JUSTIFIED IN WRITING AND SUBMITTED TO THE STATE OF ALABAMA AT THE START OF THE RENEWAL PROCESS TO EXTEND THE CONTRACT FOR AN ADDITIONAL 12 MONTH PERIOD. ANY PRICE INCREASE ALLOWED WILL BE BASED ON THE PERCENTAGE DIFFERENCE BETWEEN THE BASE MODEL BID (MSRP) IN EFFECT AT THE START OF THAT CONTRACT PERIOD, AND THE BASE MODEL BID (MSRP) IN EFFECT AT THE START OF THE RENEWAL PROCESS TO EXTEND THE CONTRACT FOR AN ADDITIONAL 12 MONTH PERIOD, NOT TO EXCEED AN INCREASE OF 5% PER 12 MONTH CONTACT PERIOD.

PRICE INCREASE REQUEST

PRICE INCREASE REQUESTS MUST BE ACCOMPANIED BY THE PRINTED BASE LIST MSRP FOR THAT MOWER/CUTTER IN EFFECT AT THE START OF THAT CONTRACT PERIOD AND THE BASE LIST MSRP IN EFFECT AT THE START OF THE RENEWAL PROCESS TO EXTEND THE CONTRACT SHOWING THE PERCENTAGE DIFFERENCE IN THE TWO BASE LIST (MSRP)S AND THE RESULTING PRICE INCREASE REQUEST. PRICE INCREASE REQUESTS ARE NOT BASED ON A PERCENTAGE DIFFERENCE IN THE CONTRACT PRICE OF THE MOWER/CUTTER. SUBMITTED PRICE INCREASE REQUESTS BASED ON A PERCENTAGE DIFFERENCE IN THE CONTRACT PRICE OF THE MOWER/CUTTER WILL NOT BE ACCEPTED. FAILURE TO SUBMIT THE PRICE INCREASE REQUESTS AS OUTLINED ABOVE WILL RESULT IN NON-COMPLIANCE OF THE TERMS AND CONDITIONS OF THE CONTRACT WHICH WILL RESULT IN THE NON-RENEWAL OF YOUR CONTRACT.

ANY PRICE RESULTING FROM AN AGREED UPON INCREASE, MUST BE FIRM FOR ONE (1) YEAR FROM VENDOR'S NOTIFICATION OF AWARD AS STATED ABOVE.

PURPOSE:

ESTABLISH A CONTRACT FROM THE ITEMS LISTED FOR ALL STATE AGENCIES.

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CONTRACT PRICES ARE AVAILABLE TO ALL LOCAL GOVERNMENTAL AGENCIES AND SCHOOLS.

QUANTITY:

THE EXACT QUANTITY OF EACH ITEM IS UNKNOWN. THE DIVISION OF PURCHASING DOES NOT GUARANTEE THE STATE WILL BUY ANY AMOUNT. ORDERS WILL BE PLACED BY AGENCIES AS NEEDED AND GIVE COMPLETE SHIPPING INSTRUCTIONS.

PARTS AND SERVICE LOCATION:

THE VENDOR AWARDED A CONTRACT UNDER THIS ITB MUST HAVE A MANUFACTURER'S SUPPORT NETWORK TO PROVIDE OEM PARTS AND SERVICE TO THE NINE (9) DIVISION OFFICES OF THE DEPARTMENT OF TRANSPORTATION. THESE PARTS AND SERVICE LOCATIONS ARE TO BE WITHIN APPROXIMATELY 200 MILES OF THE CITY LIMITS OF THE FOLLOWING DIVISION OFFICES:

- 1-GUNTERSVILLE, AL
- 2-TUSCUMBIA, AL
- 3-BIRMINGHAM, AL
- 4-ALEXANDER CITY, AL
- 5-TUSCALOOSA, AL
- 6-MONTGOMERY, AL
- 7-TROY, AL
- 8-GROVE HILL, AL
- 9-MOBILE, AL

PLEASE IDENTIFY YOUR LOCATIONS ON A SEPARATE SHEET OF PAPER. FAILURE TO LIST THOSE LOCATIONS MAY RESULT IN YOUR BID BEING REJECTED.

IN THE EVENT THERE IS NOT AN AUTHORIZED PARTS AND SERVICE DEALERSHIP WITHIN THE SPECIFIED DISTANCE OF THE NINE (9) DIVISION OFFICES, STATE PURCHASING MAY CONSIDER A PROCEDURE FOR THE USER TO MAKE A CLAIM FOR RECOVERING THE COST OF PARTS AND LABOR INCURRED IN PERFORMING REPAIRS WHICH OTHERWISE WOULD HAVE BEEN COVERED BY THE WARRANTY.

NOTE: INSTRUCTIONS AND FORMS NEEDED FOR WARRANTY CLAIMS ARE TO BE ENCLOSED WITH YOUR BID CLEARLY DENOTING THAT THESE ARE THE FORMS FOR WARRANTY CLAIMS.

## SPECIFICATIONS

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## INVITATION TO BID

## \*\*\*\*\* SPECIFICATION #020E02 \*\*\*\*\*

ROTARY CUTTER, NEW LATEST MODEL MECHANICAL HWY TYPE ROTARY CUTTER 10' OR 15' CUTTING WIDTH. TRANSPORT WIDTH: 96". TOWING TONGUE TO BE FOR DRAWBAR TYPE WITH JACKSTAND FURNISHED. HIGHWAY SAFETY SKIRT CURTAIN DOUBLE ROW 14 STAND PER FOOT CHAINS FRONT AND BACK TO BE INCLUDED. WITH ALL HOSES, HOOKUP CONNECTORS, VALVE STAND KIT AND THREE (3) SPOOL VALVE. BLADES AND P.T.O. CONNECTOR ASSEMBLIES TO BE HOOKED UP TO A 60 H.P. (MIN) MODEL TRACTOR FOR OPERATION. EQUIPPED WITH 15" SOLID TIRE.

TRIPLE CUTTING SECTIONS USING 1/2" X 4" HEAT TREATED BLADES (38-44 RC) WITH 6" OVERLAP BETWEEN SECTIONS. CUTTING CAPACITY: UP TO 2". THREE MECHANICAL P.T.O. (540 RPM) DRIVEN GEARBOXES FOR EACH SECTION TO HOUSE HEAVY DUTY TAPERED ROLLER BEARINGS WITH TRIPLE LIP SEALS. DIVIDER GEAR BOX 180 HP MIN. CENTER & WING GEAR BOX 140 HP MIN. LEFT AND RIGHT WINGS TO BE HYDRAULICALLY RAISED FROM TRACTOR OPERATOR'S POSITION USING TRIPLE CONTROL VALVE ASSEMBLY FOR RAISING WINGS TO 90 DEGREE POSITION FOR ROAD TRAVEL, AND RAISING OF CENTER SECTION TONGUE & SIX REAR SOLID WHEELS. WINGS TO OPERATE NORMALLY FROM +90 DEG. TO -22 DEG. WINGS TO HAVE MECHANICAL SAFETY LATCHES. MAIN P.T.O. DRIVE SHAFT (HEAVY DUTY 44R OR CATAGORY 5) & WING DRIVE SHAFTS (35R TYPE OR CATAGORY 4) TO HAVE SLIP CLUTCHES AND SHEAR PIN ON MAIN SHAFT (HEAVY DUTY & STANDARD WING) WITH PROTECTIVE COVERS. EACH DRIVE SHAFT IS TO ALLOW CONTINUOUS OPERATION DURING WING, RAISING, TRACTOR TURNING AND DIPPING. CV TYPE DRIVELINE.

MAIN CUTTER SECTION SHALL HAVE SINGLE OR DUAL SELF LEVELING ADJUSTABLE LINKAGE BETWEEN TONGUE & REAR WHEELS W/HYDRAULIC OVERRIDE LIFT FEATURE. CENTER SECTION SHALL HAVE CUTTING HEIGHT ADJUSTMENT BETWEEN 2" AND 12" WITH STOP COLLARS ON LIFT PISTON SHAFT.

WING CUTTING HEIGHT ADJUSTMENT TO BE MADE WITH RATCHET TYPE TURNBUCKLE (OR OTHER BIDDER DEFINED, METHOD) ATTACHED TO SINGLE SOLID WHEEL PIVOT ARM. CUTTER DECKS AND GEARBOX TO BE REINFORCED. DECK IS MIN. 7 GAUGE. WEIGHT OF UNIT TO BE 4100 LBS. (MIN.).

CLEVIS HITCH IS TO BE PROVIDED W/ CUTTER. ALSO REPLACEABLE SKID SHOES ARE TO BE PROVIDED FOR ALL SECTIONS. INCLUDE ONE SET OF PARTS AND SERVICE MANUALS.

## \*\*\*\*\* SPECIFICATION #020E03 \*\*\*\*\*

ROTARY CUTTER, NEW LATEST MODEL HIGHWAY TYPE ROTARY CUTTER 10 OR 15 FT CUTTING WIDTH. TRANSPORT WIDTH: 96". TOWING TONGUE, FLOATING HITCH TYPE TO BE FOR DRAWBAR PULL TYPE WITH JACKSTAND FURNISHED. HIGHWAY SAFETY SKIRT CURTAIN CHAINS DOUBLE ROW 14 STAND PER FT WITH ALIGNMENT CABLE TO KEEP CHAINS IN LINE TO BE INCLUDED. EQUIPPED WITH SIX (6) 15" SOLID TIRES. WITH ALL HOSES, HOOKUP CONNECTORS VALVE STAND KIT & THREE (3) SPOOL VALVE. BLADES AND PTO CONNECTOR ASSEMBLIES TO BE HOOKED UP TO A 65 HP (MIN) MODEL TRACTOR FOR OPERATION. ALL SHALL BE FULLY ASSEMBLED AND SERVICED PRIOR TO BEING DELIVERED.

\* TRIPLE CUTTING SECTIONS USING 1/2" X 4" HEAT TREATED BLADES (38-44 RC) MOUNTED ON ROUND SKID PANS WITH 6" OVERLAP BETWEEN SECTIONS

\* CUTTING CAPACITY: UP TO 3 1/2"

\* THREE MECHANICAL PTO (540 RPM) DRIVEN GEARBOXES FOR EACH SECTION TO HOUSE HEAVY DUTY TAPERED ROLLER BEARINGS WITH TRIPLE LIP SEALS. DIVIDER GEARBOX 235 HP (MIN) AND WING GEARBOXES 205 HP (MIN)

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- \* LEFT AND RIGHT WINGS TO BE HYDRAULICALLY RAISED FROM TRACTOR OPERATOR'S POSITION USING TRIPLE CONTROL VALVE ASSEMBLY FOR RAISING WINGS TO 85 DEGREE POSITION FOR ROAD TRAVEL, AND RAISING OF CENTER SECTION TONGUE AND REAR SOLID WHEELS. WINGS TO OPERATE NORMALLY FROM +85 DEGREES TO -24 DEGREES. WINGS TO HAVE MECHANICAL SAFETY LATCHES.
- \* MAIN PTO DRIVE SHAFT (HEAVY DUTY 44R OR CATEGORY 5) & WING DRIVE SHAFTS (35R OR CATEGORY 4) TO HAVE SLIP CLUTCHES; AND SHEAR PIN ON MAIN SHAFT WITH PROTECTIVE COVERS. EACH DRIVE SHAFT IS TO ALLOW CONTINUOUS OPERATION DURING WING RAISING, TRACTOR TURNINGS AND DIPPING. PROVIDE CV DRIVELINE.
- \* MAIN CUTTER SECTION SHALL HAVE SINGLE SELF LEAVELING ADJUSTABLE LINKAGE BETWEEN TONGUE AND REAR WHEELS WITH HYDRAULIC OVERRIDE LIFT FEATURE. WING FRAMES TO MOVE TO -24 DEGREES TO +35 DEGREES WITHOUT ACTIVATING WING CYLINDERS.
- \* CENTER SECTION SHALL HAVE CUTTING HEIGHT ADJUSTMENT BETWEEN 1.5" AND 15" WITH STOP COLLARS ON LIFT PISTON SHAFTS. WING CUTTING HEIGHT ADJUSTMENT TO BE HYDRAULIC. FLOATING HITCH IS TO BE PROVIDED.
- \* CUTTER DECKS AND GEARBOX TO BE REINFORCED. DECK IN MINIMUM 7 GAUGE CONTINUOUSLY WELDED STEEL, WITH UNDER DECK RINGS, REPLACEABLE AND ADJUSTABLE SIDE SHIRTS 1/4" STEEL WITH REPLACEABLE SKID SHOES. CENTER SECTION TO HAVE NO RIB TOP CENTER DECK FOR EASY CLEANING.
- \* INCLUDE ONE SET OF PARTS AND SERVICE MANUAL.

\*\*\*\*\* SPECIFICATION #020E04 \*\*\*\*\*

ROTARY CUTTER, NEW LATEST MODEL 10' OR 15' HYDRAULICALLY POWERED THREE (3) SECTION TOWED (DRAWBAR) CLEVIS HITCH MOWING MACHINE FOR A MINIMUM OF 70 HP TRACTOR. A LIFTING JACK SHALL BE ATTACHED TO THE UNIT FOR LIFTING THE FRONT OF THE UNIT OR TO LIFT A WHEEL FOR TIRE CHANGING REQUIREMENTS.

UNIT WILL INCLUDE ALL NECESSARY MOUNTING HARDWARE AND HOOK-UP CONNECTORS TO INCLUDE 3-SPOOL CONTROL VALVE AND ASSOCIATED HOSES.

VENDOR TO FURNISH TWO (2) SETS OF OPERATORS REPAIR MANUALS AND PARTS BOOKS WITH EACH UNIT. UNITS TO BE FULLY ASSEMBLED, SERVICED AND READY FOR MOUNTING PRIOR TO DELIVERY. ACTUAL MOUNTING OF UNITS WILL BE ACCOMPLISHED BY THE DEPARTMENT.  
 EQUIPPED WITH: SIX SOLID TIRES (8" X 21")

THE BLADES SHALL BE A MINIMUM OF 1/2" X 3-1/2" X 24-3/4". THE MATERIAL USED IN THE FREE SWINGING, UP DRAFT BLADES SHALL BE HEAT TREATED ALLOY STEEL. ARRANGE BLADES SO THAT WHEN CUTTING STRAIGHT PATHS THE SWATHE OF THE CENTER BLADE IS OVERLAPPED BY A MINIMUM OF 8" BY THE WING BLADE. BLADES SHALL BE SECURED TO THE BLADE BAR BY A SPECIALLY FORGED 1-1/8" MINIMUM DIAMETER BOLT. THE BOLT SHALL BE THRU HARDENED AND HAVE AN INDUCTION HARDENED WEAR SURFACE AT ALL POINTS OF CONTACT. ATTACHMENT OF THE BOLT WILL BE SECURED WITH LOCKTITE, LOCKWASHER, LOCKNUT AND 250 FOOT POUNDS OF TORQUE AND BE A GRADE 8 MINIMUM STRENGTH. THE BLADE BAR SHALL HAVE A MINIMUM THICKNESS OF 1-1/4" AND A MINIMUM WIDTH OF 6". THE BOLTS HOLDING THE BLADE BAR TO THE SPINDLE SHALL BE TORQUED A MINIMUM OF 400 FOOT POUNDS. THE BLADE SPINDLE SHALL BE THRU HARDENED ALLOY STEEL WITH A MINIMUM 4-1/2" MACHINED BASE AND 9" LENGTH. THE SPINDLE SHALL BE HOUSED IN A MACHINED ENCLOSURE AND SUPPORTED ON TWO TAPERED ROLLER BEARINGS. SECURED BY A DOUBLE NUT AND LOCK RING. THE HOUSING SHALL HAVE PROVISION FOR REFILLING THE GREASE CAVITY OF THE BEARINGS. THE SPINDLE HOUSING SHALL BE A CAST STEEL UNIBODY DESIGN THAT FULLY



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ENCLOSES THE SPINDLE FROM THE SEAL SURFACE TO THE HYDRAULIC MOTOR FLANGE. THE MOTOR SHAFT TO SPINDLE CONNECTION SHALL BE DIRECT COUPLED THROUGH CONCENTRIC MACHINED MOUNTING SURFACES OR CHAIN COUPLERS TO CONNECT THE MOTOR AND SPINDLE. THE SPINDLE HOUSING SHALL BE SECURED TO THE MOWER DECK WITH SIX EACH GRADE 8 BOLTS AND NUTS, TORQUED TO 100 FOOT POUNDS MINIMUM. HYDRAULIC DRIVE MOTORS SHALL BE GEAR TYPE WITH A HYDRAULIC RELIEF CARTRIDGE PROVIDED FOR EACH MOTOR. THE RELIEF CARTRIDGE SHALL BE ATTACHED TO THE MOTOR AND SHALL BE REPLACEABLE. EACH RELIEF VALVE SHALL FUNCTION SO THAT WHEN ONE VALVE IS RELIEVED, PRESSURE AND FLOW TO THE OTHER MOTORS IS NOT FOUR TIMES THE WORKING PRESSURE OF THE UNIT, OR 10,000 LBS. THE HYDRAULIC PUMP CONNECTED TO A 540 RPM P.T.O. SHALL DELIVER 65 GALLONS PER MINUTE AT 2,160 RPM. IT SHALL HAVE A MAXIMUM HORSEPOWER RATING OF 145 HP. THE TANK SHALL BE AN INTEGRAL PART OF THE UNIT FRAME AND SHALL HOLD 35 GALLONS OF A HIGH GRADE UNIVERSAL HYDRAULIC OIL. THE TEMPERATURE OF THE UNITS SHALL NOT EXCEED 90 DEGREES ABOVE THE AMBIENT TEMPERATURE. DECK MATERIAL SHALL BE OF 10 GAUGE MINIMUM, WELDED CONSTRUCTION. FRAME SHALL BE OF A MINIMUM 3/16" X 2" X 4" STEEL TUBING. FRAME SHALL BE STRUCTURED TO RECEIVE THE HYDRAULIC FLUID FROM EACH MOTOR AND ACT AS A COOLING RESERVOIR FROM THE HYDRAULIC SYSTEM. THE WELDED CONSTRUCTION SHALL BE GUSSETED AT STRESS POINTS. THE WING UNITS SHALL MOVE IN A VERTICAL ARC OF NEGATIVE 22 DEGREES THRU A POSITIVE 90 DEGREES IN RELATION TO THE MAIN DECK. THE CONTROL SHALL BE HYDRAULIC. A MINIMUM DIAMETER OF 1-3/16", THE HINGE PINS SHALL BE HELD IN POSITION BY A ROLL PIN OF 5/16" MINIMUM. THE ANGLE OF THE WING DECK SHALL BE CONTROLLED BY HYDRAULIC VALVE. THE HYDRAULIC VALVE SEGMENT DESIGNED FOR THE WING CONTROL SHALL HAVE A FLOAT POSITION TO PROVIDE FOR THE WING TO FOLLOW THE TERRAIN WITH NO OPERATOR CONTROL. THE CUTTING HEIGHT OF THE MOWING BLADES SHALL BE CONTROLLED FROM THE OPERATORS POSITION BY THE WAY OF A SELF CENTERING HYDRAULIC VALVE. POWER SHALL BE PROVIDED BY THE TRACTOR HYDRAULIC SYSTEM. THE SIDE WALL OF EACH OUTSIDE SECTION OF THIS UNIT SHALL BE OF 1/4" MINIMUM THICKNESS. THE FRONT AND REAR AREAS OF THE UNIT SHALL BE EQUIPPED WITH CHAIN FILTERS. THE CHAIN FILTERS SHALL BE AT LEAST 2 ROW DOUBLE CURTAIN. THE COMBINED NUMBER OF STRANDS PER FOOT IN THE TWO ROWS SHALL BE 14 MINIMUM. THE OUTSIDE ROW OF CHAIN SHALL HAVE A STEEL CABLE LACED THRU THE SECOND LINK FROM THE BOTTOM OF EACH STRAND. THE CABLE SHALL BE A MINIMUM 1/4" DIAMETER FASTENED WITH A CABLE CLAMP TO THE LAST STRAND OF EACH OPENING. WEIGHT: THE UNIT SHALL WEIGH 4,200 LBS. MINIMUM, FULLY EQUIPPED.

\*\*\*\*\* SPECIFICATIONS 020E05 \*\*\*\*\*

ROTARY CUTTER, NEW LATEST MODEL 5 AND 6 FT. LIFT TYPE. SAFETY CHAINS FRONT AND REAR. CUTTERS TO BE ASSEMBLED & READY FOR SERVICE WHEN DELIVERED.  
WIDTH OF CUT: 60" FOR 5' AND 72" FOR 6'  
WEIGHT: 902 LBS. MIN. FOR 6' AND 737 LBS. FOR 5'  
FRAME: 1 PC ARC WELD "X" TYPE BRACING TO EDGE OF TOP DECK.  
GA OF TOP DECK: 7, 1018 MATERIALS, GA OF SIDE SKIT: 1/4" X 6".  
1015 MATERIAL. LEADING EDGE SKID PLATED TO BE REPLACEABLE (1/4" STEEL). BLADES: ONE SET OF 2 HINGED, FREE SWINGING, HD SPRING STEEL. 1/2" X 3" HEAT TREATED (38-44RC). BLADE HOLDER ASSEMBLY: HD "FLYING SAUCER" ROUND TYPE, W/RADIUS TOP LIP. TOP LIP TO BE NOT MORE THAN 1/4" FROM BOTTOM OF TOP DECK & TO BE MOUNTED ON TAPERED KEY WAY (OR SPLINE) VERTICAL LOWER SHAFT BY USE OF LEFT HAND TREADED NUT. BLADE HOLDER MAY ALSO BE A 5/8" STEEL PLATE WITH SHIELDING FOR BLADE BOLTS AND GEAR BOX OUTPUT SHAFT. 140 HP MIN GEAR BOX : HD OIL BATH LUBRICATED W/STEEL CUT GEARS 540 RPM. HEAT TREATED SPLINED INPUT & OUTPUT SHAFTS, 60 HP RATING. DRIVE LINE: HD UNIVERSAL ASSEMBLY WITH SPLINED YOKES ON BOTH ENDS. GEAR RATION: 1.4: 1. SLIP CLUTCH: SPRING LOADED W/36 SPECIAL BELLEVILLE SPRING WASHERS. SLIP CLUTCH ON TWO FIBROUS DISC PRESSURE PLATED OR EQUAL. DRIVE SHAFT TO HAVE SHEAR PIN(S). TAILWHEEL: HEAVY DUTY; SOLID W/H.D. BRACKET. MINIMUM HP.

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REQUIREMENT: 30 HP FOR 5' 40 HP FOR 6'. HITCH: THREE (3) POINT;  
HEAVY DUTY. DRIVE SHAFT: HEAVY DUTY 44R. CUTTING HEIGHT: 2"-12".  
CUTTING CAPACITY: THROUGH 3". SAFETY CHAINS FOR FRONT OPENING  
(MOUNTED ON REMOVABLE ROD).

## \*\*\*\*\* SPECIFICATIONS 020E06 \*\*\*\*\*

ROTARY CUTTER, NEW LATEST MODEL - 7 FT. CUTTING WIDTH 84"; SAFETY CHAIN CURTAIN ACROSS REAR & OPEN FRONT. WHEEL - 15" SOLID TIRE, WITH HEAVY DUTY TRAIL WHEEL. SINGLE CUTTING SECTION WITH ROUND BLADE HOLDERS USING 1/2" X 3" HEAT TREATED OR CHROME ALLOY BLADES (38-44 RC) BLADE HOLDER ASSEMBLY: HD "FLYING SAUCER" ROUND TYPE, W/RADIUS TOP LIP. TOP LIP TO BE NOT MORE THAN 1/4" FROM BOTTOM OF TOP DECK AND TO BE MOUNTED ON TAPERED KEY WAY (OR SPLINE) VERTICAL LOWER SHAFT BY USE OF A LEFT HAND TREADED NUT. BLADE HOLDER MAY ALSO BE A 5/8" STEEL PLATE WITH SHIELDING FOR BLADE BOLTS AND GEAR BOX OUTPUT SHAFT. EXTRA HEAVY DUTY 540 R.P.M. 140 HP MIN. GEARBOX W/TAPERED ROLLER BEARING & TRIPLE LIP SEALS, 75 HO RATING. TWO U-JOINTS P.T.O. HEAVY DUTY (44R OR CATAGORY 5) DRIVE SHAFT WITH HEAVY DUTY SLIP CLUTCH AND SHEAR PIN(S), WITH SHIELD, ALLOWING BLADE TIP SPEED TO BE 11,875 FT/MIN DUAL TAIL WHEELS TO BE SOLID TYPE TIRE MOUNTED OUTSIDE ON 360 DEG. PIVOTS. THREE POINT HITCH. THE CUTTING HEIGHT MUST BE ADJUSTABLE BETWEEN 2" & 12" ABOVE GROUND WITH RATCHET TYPE TURNBUCKLE ADJUSTMENT OR OTHER (BIDDER DEFINED) METHOD. DECK THICKNESS TO BE 7 GAUGE STEEL REINFORCED WITH "U" CHANNELS CONNECTING TO GEARBOX MOUNT. "X" TYPE BRACING TO EDGE OF TOP DECK. ADJUSTABLE LIFT ATTACHMENT, REAR WHEEL CONNECTORS & HEIGHT ADJUSTMENT CONNECTOR, ARE ALL INTERGRATED WITH DECK REINFORCEMENT. SIDE SKIRTS ARE BE STEEL 1/4" X 7" LEADING EDGE SKID PLATES ARE TO BE REPLACEABLE (1/4" STEEL). CUTTING CAPACITY TO BE THROUGH 3" DIA. SAFETY CHAINS FOR FRONT OPENING (MOUNTED ON REMOVABLE ROD). WEIGHT OF CUTTER TO BE 1,410 LBS. USING 50 H.P. (MIN.) TRACTOR TO OPERATE.

## \*\*\*\*\* SPECIFICATIONS 020E08 \*\*\*\*\*

ROTARY CUTTER, NEW LATEST MODEL 10.5 FT. HIGHWAY TYPE FOR 50 HP (MIN.) TRACTOR. HITCH: PULL TYPE SELF-LEVELING WITH PULL BUNDLE INCLUDING HYDRAULIC HEIGHT ADJUSTMENT. WHEEL TYPE: 5 EA. LAMINATED 14". DOUBLE ROW SAFETY CHAINS 14 STAND PER FOOT: ALL FOR HIGHWAY MOWING. WING LIFT: HYDRAULIC WING FLEX: +90 TO -22 DEG. ALL HOOK UP CONNECTIONS TO INCLUDE VALVE STAND KIT WITH 2-SPOOL VALVE. CUTTING WIDTH: 126". TRANSPORT WIDTH: 96". CUTTING HEIGHT: 2"-12". CUTTING CAPACITY: THRU 2" DIA. DECK THICKNESS: 7 GAUGE. SIDE SKIRT THICKNESS: 1/4" X 6". DRIVE SHAFT: ASAE (CATEGORY 5 OR 44R) INPUT AND ASAE (CATAGORY 4 OR 35R TYPE) FOR WING. GEARBOXES: 540 R.P.M. WITH HEAVY DUTY TAPERED ROLLER BEARINGS AND PROTECTIVE COVERS. SLIP CLUTCH: HEAVY DUTY. BLADE HOLDERS: STUMP JUMPER. BLADES: 1/2" X 4: UPLIFT WITH 6" OVERLAP (HEAT TREATED BLADES 38-44 RC).

PROVIDE CV DRIVE LINE AND CLEVIS HITCH. COUNTER WEIGHT BOX WITH STANDARD WEIGHT INCLUDED. MAIN DRIVE SHAFT TO HAVE SHEAR PIN. CENTER GEAR BOX TO BE 180HP/WING GEAR BOX TO BE 140HP.

## \*\*\*\*\* SPECIFICATIONS 020E09 \*\*\*\*\*

MOWER, FLAIL, NEW LATEST MODEL. CUTS GRASS, WEEDS & BRUSH IN 3 SIZES BETWEEN 57" AND 88" WIDTH. THE MOWER SHALL BE ATTACHED TO THE TRACTOR THREE POINT HITCH, CENTER MOUNTED. POWER SHALL BE PROVIDED BY THE TRACTOR POWER TAKE OFF SHAFT AND ALL DRIVE LINE COMPONENTS SHALL BE SHIELDED. THE CUTTING KNIFE OF THE UNIT SHALL BE CONSTRUCTED OF

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TEMPERED STEEL. KNIVES SHALL BE 4 OZ, 1-3/4" X 3-5/16", MOUNTED IN PAIRS ON PRECISE FORGED HEAT TREATED CLEVIS RINGS OR A SINGLE PIECE KNIFE .25" X 1.35" WITH 2.61" CUTTING EDGE, 45 DEG. AIR LIFT. EACH KNIFE PAIR SHALL BE HELD IN PLACE ON THE CUTTER SHAFT BY A HARDENED STEEL PIN & HAMMER LOCK CUTTER PIN OR HARDENED STEEL 7/16" BOLT. THIS ATTACHMENT SHALL ALLOW REPLACEMENT OF EACH KNIFE WITHOUT AFFECTIVE THE OTHER ARRANGED IN A PATTERN THAT PROVIDES HIGH SPEED VIBRATION FREE OPERATION WITH ANYT APPROVED KNIFE. THIS DESIGN SHALL ELIMINATE THE NEED FOR BALANCE WEIGHTS. THE CUTTER SHAFT SHALL TURN ON BEARING WITH AN INTERNAL BORE OF AT LEAST 1.5". EACH SHAFT END SHALL BE SUPPORTED BY BEARINGS WITH A MINIMUM LOAD RATING OF 1650 POUNDS EACH AT NORMAL OPERATING SPEEDS. RELUBRICATION FITTING SHALL BE PROVIDING FOR EACH BEARING.

THE CUTTER SHAFT SHALL BE HOUSED IN 11 GAUGE (MIN.) STEEL DECK. REPLACEABLE SKID SHOES SHALL BE ATTACHED TO LOWER EDGE OF THE CUTTER SHAFT HOUSING END PLATES.

THE OUTER PORTION OF THE BEARING SHALL BE PROTECTED BY A STEEL FENDER. THE CUTTING HEIGHT OF THE UNIT SHALL BE ADJUSTABLE BYMEANS OF A FULL SPAN TUBULAR STEEL ROLLER. THE ROLLER SHALL HAVE A MINIMUM DIAMETER OF 5.56" WITH FORGED CONTOUR ENDS TO REDUCE TURF DISTURBANCE WHEN TURNING. THE HEIGHT OF CUT SHALL BE ADJUSTABLE FROM 3/4" TO 5".

THE REAR ROLLER IS SUPPORTED BY A FULL LENGTH TIE ROD THAT SUPPORTS THE REAR OF THE MOWER UNIT AND SERVES AS THE ROLLER AXLE. THE REAR ROLLER BEARING SHALL BE BALL TYPE WITH 1-3/8" DIAMETER BORE, ONE BEARING SUPPORTS EACH END OF ROLLER WITH A 5 M.P.H. RATING OF ONE TON. GREASE FITTINGS SHALL BE RECESSED INTO EACH END OF THE TIE ROD, TO PROVIDE RELUBRICATOIN OF REAR ROLLER BEARINGS AND TO LIMIT EXPOSURE OF THE GREASE FITTING.

POWER SHALL BE TRANSMITTED FROM THE TRACTOR VIA A SHIELDED UNIVERSAL JOINTED SHAFT WITH A MINIMUM 35R RATING. A NINETY DEG. SEALED GEAR BOX WITH A 60 HP (MIN.) CONTINUOUS RATING SHALL BE PART OF THE PRE-ALIGNED POWER TRANSMISSION UNIT. DRIVE LINE OVERLOAD PROTECTION SHALL BE PROVIDED AND ALSO A BELT TENSIONING SYSTEM THAT MAINTAINS PROPER PEAK TORQUE FROM EXTENSION SHAFT TO CUTTER SHAFT.

THE MOWER SHALL BE ATTACHED TO THE TRACTOR THREE POINT HITCH, CENTER MOUNTED. TRACTOR VERTICAL LINKS SHALL BE REPLACED WITH FLEXIBLE LIFT CHAINS OR SLOTTED BAR AS REQUIRED TO EASILY MANEUVER TRACTOR AND MOWER OVER ROUGH TERRAIN. LIFT CHAIN SHALL PROVIDE GREATER VERTICAL AND ANGULAR RANGE OF THE MOWER IN RELATION TO THE TRACTOR. A FULL SPAN, RUBBER/FABRIC FLEXIBLE DEFECTOR SHALL BE MOUNTED ON REAR EDGE OF CUTTER HOUSING. THE REAR DEFLECTOR SHALL GUARD AGAINST OBJECT OR CLIPPINGS BEING DISCHARGED UPWARD FROM REAR OF MACHING. THE REPLACEABLE DEFECTOR SHALL BE A MINIMUM OF SIX INCHES IN WIDTH.

	CUTTING WIDTH	APPROX WT
MOWER 1	57"-62"	790
MOWER 2	68"-74"	890
MOWER 3	88"	1050

\*\*\*\*\*SPECIFICATION #020E10\*\*\*\*\*  
 FLAIL MOWER, SINGLE WING TURF:  
 MOWER UNIT SHALL HAVE TWO INDEPENDENT SECTIONS, ONE REAR SECTION AND ONE MID-MOUNTED (RIGHT SIDE) WING SECTION. THE REAR SECTION SHALL PRODUCE A MINIMUM OF EIGHTY-EIGHT (88) INCHES OF CUT WITH POWER TO THE CUTTING BLADES PRODUCED BY THE TRACTOR POWER TAKE-OFF SHAFT. A SAFETY CUTTER SHAFT CUT OFF SHALL BE STANDARD FOR THE WING SECTION. THE WING SECTION SHALL PRODUCE A 74" SWATHE. WING & REAR MOWING UNIT TO HAVE COARSE CUT KNIVES WITH FORWARD OR REVERSE MOWING DRIVE ROTATION. MOWER SECTION SHALL BE EQUIPPED WITH A REPLACABLE, FULL SPAN, REAR RUBBER/FABRIC CURTAIN TO PROVIDE DOWNWARD DEFLECTION OF DEBRIS. PRIOR

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TO DELIVERY, VENDOR WILL: ADJUST ENGINE TO PROPER OPERATING CONDITIONS. CHECK TO ASSURE PERFECT OPERATION OF ALL MECHANICAL FEATURES. PROVIDE A WRITTEN LISTING OF NEAREST LOCATION OF COMPLETE SUPPLY OF SPARE PARTS AND SERVICES. ENSURE THAT TRACTOR & MOWING UNITS ARE CONNECTED AND ARE DELIVERED AS ONE (1) OPERATIONAL UNIT. PROVIDE A MINIMUM OF FOUR (4) HOURS OPERATORS' & MAINTENANCE TRAINING. FURNISH TWO (2) SETS OF OPERATOR'S MANUALS, TWO (2) SETS OF PARTS & SHOP MANUALS, & TWO (2) SETS OF WIRING DIAGRAMS & LUBRICATION CHARTS FOR TRACTOR AND MOWER.

WEIGHT: NOT LESS THAN 4,455 LBS

A TRACTOR MOUNTED FLAIL MOWING UNIT, TO MOW GRASS. ATTACHMENT OF REAR UNIT TO THE TRACTOR SHALL BE VIA TRACTOR THREE-POINT LIFT HYDRAULIC SYSTEM. THE WING CUTTER SHALL BE POWERED BY A HYDRAULIC PUMP AND MOTOR SYSTEM THAT SHALL OPERATE INDEPENDENTLY AND SHALL NOT BE CONNECTED TO THE TRACTOR HYDRAULIC SYSTEM. THE WING SECTION SHALL BE CONTROLLED FROM THE OPERATORS POSITION. TOTAL WIDTH OF SWATHE DESIRED SHALL BE APPROX. 13 FEET. WITH THE WING SECTION RETRACTED TO TRANSPORT POSITION THE TRACTOR AND UNIT SHALL BE CAPABLE OF OPERATING IN A RIGHT OF WAY MINIMUM OF ONE HUNDRED INCHES. KNIVES SHALL BE FREE SWINGING DESIGN. FINE CUT. KNIFE MATERIAL SHALL BE TEMPERED, HARDENED STEEL. WING UNIT SHALL HAVE MINIMUM OF 40 SINGLE OR PAIRED KNIVES AND REAR UNIT A MINIMUM OF 44 KNIVES. KNIVES SHALL BE MOUNTED IN A MANNER TO PROVIDE EASY REPLACEMENT WITHOUT AFFECTING ANY OTHER KNIFE. THE ENDS OF EACH CUTTER SHAFT PROVIDED FOR AN ANTI-JAMMING TO LIMIT WIRE, ROPE AND DEBRIS FROM WRAPPING ON THE SHAFT. THE CUTTER SHAFT END COVERS SHALL BE ATTACHED TO THE CUTTER SHAFT HOUSING. THE CUTTER SHAFT SHALL BE BE SUPPORTED BY BEARING WITH 1 15/16" MINIMUM BORE. A MINIMUM OF TWO BEARINGS PER SHAFT WITH A LOAD RATING OF 1650 POUNDS EACH SHALL BE USED. GREASE FITTINGS SHALL BE PROVIDED TO ALLOW RELUBRICATION OF THE CUTTER SHAFT BEARINGS. BEARING HOUSING SHALL BE ATTACHED TO THE TWO SIDE SKIRTS OF THE CUTTER SHAFT HOUSING. THE BEARING HOUSINGS SHALL ENCLOSE THE BEARING TO PREVENT FOREIGN MATERIAL FROM DAMAGING BEARINGS. THE CUTTER SHAFT HOUSING SHALL BE EQUIPPED WITH REPLACEABLE BUMPER GUARDS OVER EXPOSED SHAFT ENDS. CUTTER SHAFT HOUSING SHALL BE MINIMUM OF 10 GAUGE STEEL. SKID SHOES SHALL BE ATTACHED AT EACH END OF THE CUTTER HOUSING. WEAR PLATES SHALL BE REPLACEABLE. MINIMUM HEIGHTS OF CUT SHALL BE 3/4" AND SHALL BE ADJUSTABLE TO 6". HEIGHT SHALL BE MAINTAINED BY A SIX INCH DIAMETER FULL SPAN ROLLER. THE ROLLER SHALL BE SUPPORTED BY BEARINGS WITH A LOAD RATING OF ONE TON MINIMUM EACH AT 5 MPH. A RECESSED GREASE FITTING SHALL BE PROVIDED AT EACH END OF THE ROLLER TO ALLOW RELUBRICATION OF THE REAR ROLLER BEARINGS. THE REAR SECTION MOWER SHALL BE GEAR DRIVEN FROM THE TRACTOR 540 RPM PTO SHAFT. THE DRIVE SHAFT SHALL BE A MINIMUM OF 35R THE GEAR BOX SHALL BE A MINIMUM OF 60 CONTINUOUS HORSE POWER. POWER SHALL BE TRANSMITTED FROM THE OUTPUT DRIVE SHAFT TO THE CUTTER SHAFT THROUGH V-BELT(S). THE V-BELT SHALL BE CONSTRUCTED WITH CORDS DESIGNED TO OPERATE WITH REVERSE BEND. THE ENTIRE DRIVE SYSTEM SHALL BE SHIELDED. POWER FROM THE WING UNIT SHALL BE PROVIDED BY HYDRAULIC PUMP AND MOTOR. THE PUMP SHALL BE POWERED BY THE TRACTOR ENGINE. HYDRAULIC HOSE WITH A SAFETY RATING OF 4 TO 1 SHALL BE USED TO ROUTE THE FLUID FROM PUMP TO MOTOR AND BACK TO THE OIL RESERVOIR. EACH HYDRAULIC SYSTEM SHALL BE PROTECTED BY A HYDRAULIC RELIEF VALVE. THE WING SECTION POWER TRAIN SHALL BE PROTECTED BY AN ADJUSTABLE ELECTRIC MERCURY SWITCH OR APPROVED EQUAL SHUT-OFF SWITCH. THIS SWITCH SHALL SHUT-OFF HYDRAULIC POWER TO THE WING MOTOR WHEN THE WING IS RAISED ABOVE A PRESELECTED ANGLE. ACCIDENTAL ACTIVATION OF THE WING CUTTER SHAFT SHALL BE PREVENTED BY A FRICTION BRAKE OR APPROVED EQUAL DEVICE THAT SHALL BE ENGAGED WHEN THE WING SECTIONS ARE IN THE TRANSPORT POSITION. THE TRACTOR 3-POINT HITCH SYSTEM SHALL BE USED TO RAISE & LOWER THE REAR MOWER SECTION FROM CUTTING POSITION TO TRANSPORT POSITION. FLEXIBLE LIFT CHAINS OR SLOTTED BAR SHALL PROVIDE VERTICAL AND ANGULAR MOVEMENT OF THE REAR MOWER SECTION. THE WING SECTION SHALL BE CONNECTED TO THE TRACTOR BY A LONGITUDINAL MEMBER FASTENED AT THE REAR AND FRONT OF THE TRACTOR. POSITION CONTROL FOR THE WING SHALL BE PROVIDED BY HYDRAULIC CYLINDERS. ONE CYLINDER SHALL

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BE FOR VERTICAL LIFT WITH A MINIMUM STROKE OF SIX INCHES PROVIDING A MINIMUM VERTICAL ARC FROM 45 DEGREE DOWN TO 90 DEGREE UP. TILT CYLINDER SHALL HAVE A MINIMUM STROKE OF NINE INCHES PROVIDING A MINIMUM HEIGHT RANGE OF FOUR INCHES BELOW GRADE TO FOURTEEN INCHES ABOVE GRADE ALLOWING CURB HEIGHT MOWING FROM STREET. PRESSURE SAFETY FACTOR FOR CONTROL SYSTEM HOSES SHALL BE 4 TO 1. CONTROLS FOR THE POSITIONING CYLINDERS SHALL BE LOCATED WITHIN EASY REACH OF THE OPERATOR. EACH PORTION OF THE HYDRAULIC POSITIONING SYSTEM SHALL BE PROTECTED BY A HYDRAULIC RELIEF VALVE. THE WING SECTIONS WILL FOLLOW THE CONTOUR OF THE GROUND WITHOUT OPERATOR CONTROL (IE. FLOAT POSITION SELECTION). THE WING CUTTER SHAFT SHALL BE CONTROLLED BY A VALVE. THIS VALVE SHALL DIRECT THE FLOW OF THE HYDRAULIC FLUID FROM THE PUMP TO THE MOTOR OR BACK TO THE HYDRAULIC TANK. THE PUMP FOR THE WING SECTION SHALL BE POWERED BY AN ENGINE CRANK SHAFT EXTENSION. THE PUMP SHALL BE A GEAR OR PISTON DESIGN. FLOW SHALL BE A MINIMUM OF 20 GALLONS PER MINUTE AT RATED R.P.M. WITH SYSTEM RELIEF VALVE SETTING OF NO MORE THAN 3500 PSI. THE WING UNIT SHALL BE PROVIDED WITH A FULL LENGTH COOLING TUBE AS WELL AS A HYDRAULIC RESERVOIR. THE RESERVOIR SHALL BE EQUIPPED WITH AN INTERNAL REPLACEABLE FILTER, TEMPERATURE GAUGE AND OIL QUANTITY INDICATOR. A HEAVY DUTY STEEL BUMPER SHALL SERVE AS COLLISION PROTECTION FOR THE HYDRAULIC DRIVE COMPONENTS. THE MOWER UNIT SHALL WEIGH A MINIMUM OF 2770 POUNDS.

\*\*\*\*\*SPECIFICATION 020E11\*\*\*\*\*

FLAIL MOWERS: MOWER UNIT SHALL BE TRACTOR MOUNTED AND SHALL MOW GRASS, WEEDS AND LIGHT BRUSH. THE UNIT SHALL HAVE THREE INDEPENDENT SECTIONS, ONE REAR SECTION AND TWO MID-MOUNTED WING SECTIONS. ATTACHMENT OF THE REAR UNIT TO THE TRACTOR SHALL BE VIA TRACTOR THREE POINT LIFT. HYDRAULIC SYSTEM. THE WING CUTTER SHALL BE POWERED BY HYDRAULIC PUMPS AND MOTOR SYSTEM THAT SHALL OPERATE INDEPENDENTLY AND SHALL NOT BE CONNECTED TO THE TRACTOR HYDRAULIC SYSTEM. POWER TO POSITION THE WING SECTION SHALL BE PROVIDED BY A HYDRAULIC CYLINDER SYSTEM. KNIVES: KNIVES SHALL BE REVERSIBLE, FREE SWINGING DESIGN. STYLE COARSE: VENDOR TO FURNISH TWO (2) SETS OF OPERATOR'S MANUALS, TWO (2) SETS OF PARTS AND SHOP MANUALS AND TWO (2) SETS OF WIRING DIAGRAMS AND LUBRICATION CHARTS FOR TRACTOR AND MOWER. THE DELIVERED UNITS WILL INCLUDE: COMPLETE LUBRICATION. FILLING CRANKCASE WITH OIL. ADJUSTMENT OF ENGINE TO PROPER OPERATING CONDITIONS, CAREFUL CHECK TO ASSURE PERFECT OPERATIONS OF ALL MECHANICAL FEATURES. CLEANING OF VEHICLE IF NECESSARY & REMOVAL OF ALL UNNECESSARY TAGS, STICKERS, PAPERS, ETC.

OTHER TRACTOR SPECS. TO BE INCLUDED: DRY TYPE AIR CLEANER WITH PRE-CLEANER TRANSMISSION CONSTANT MESH 8 SPEED FORWARD 2 REVERSE WITH HELICAL GEARS AND SLIDING COLLARS. STEERING: POWER. DUAL HEADLIGHTS COMBINATION REAR TAILLIGHT W/FLASHING AMBER LIGHTS. BRAKES: HYDRAULICALLY ACTUATED FULLY ENCLOSED WET DISC; SELF-EQUALIZING. FOOT OPERATED INDIVIDUALLY OR SIMULTANEOUSLY FOOT ACCELERATOR. POWER TAKE-OFF: INDEPENDENT (540 RPM) AT REAR OF TRACTOR. SHIPPING WEIGHT: 5,695 LBS. MINIMUM.

THE MOWER UNIT SHALL BE SO MOUNTED AS TO BE FREE TO "FLOAT" FOLLOWING THE CONTOURS OF THE GROUND, OR AT THE OPERATOR'S DISCRETION TO BE HELD AT VARYING HEIGHTS & ANGLES OF TILT ABOVE THE GROUND SO AS TO BE CAPABLE OF CUTTING OVER OBJECTS, SOFT AREAS, WATER, VOIDS, ETC WITHOUT THE NECESSITY OF MAINTAINING GROUND CONTACT FOR SUPPORT OF THE MOWER UNITS. THE REAR SECTION SHALL PRODUCE A MINIMUM OF EIGHTY-EIGHT INCHES OF CUT WITH POWER TO THE CUTTING BLADES PRODUCED BY THE TRACTORS POWER TAKE OFF SHAFT. THE WING SECTIONS SHALL BE CONTROLLED FROM THE OPERATOR'S POSITION WITH ELECTRIC AND MECHANICAL VALVES. A SAFETY SWITCH SHALL BE STANDARD FOR EACH WING SECTION. TOTAL WIDTH OF SWATHE IN FLAT OUT POSITION SHALL BE APPROXIMATELY 18' 5" WITH WING SECTIONS RETRACTED TO TRANSPORT POSITION, THE TRACTOR AND UNIT SHALL BE CAPABLE OF OPERATING IN A RIGHT OF WAY MINIMUM OF ONE HUNDRED INCHES. KNIVES

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SHALL BE 1 3/4" X 3 5/16", RING MOUNTED, IN PAIRS ON FORGED HEAT TREATED CLEVIS RINGS. KNIFE MATERIAL SHALL BE TEMPERED, HARDENED STEEL KNIFE ATTACHMENT: EACH PAIR OF KNIVES SHALL BE SECURED TO THE CUTTER SHAFT LUGS BY 7/16" X 5/16" HARDENED PINS AND 1/8" X 3/4" CUTTER PINS OR 7/16" BOLT. EACH PAIR OF KNIVES SHALL BE MOUNTED IN A MANNER TO PROVIDE EASY REPLACEMENT OF EACH PAIR WITHOUT AFFECTING ANY OTHER KNIFE. CUTTER SHAFT: THE KNIFE SUPPORT SHALL BE 4-1/2" MINIMUM DIAMETER DRAWN STEEL TUBE. THE ENDS OF EACH CUTTER SHAFT SHALL PROVIDE FOR ANTI-JAMMING TO PREVENT WIRE, ROPE, DEBRIS FROM WRAPPING ON THE SHAFT. THE CUTTER SHAFT END COVERS SHALL BE ATTACHED TO THE SHAFT HOUSING. CUTTER SHAFT BEARINGS: THE CUTTER SHAFT SHALL BE SUPPORTED BY BEARINGS WITH 1-15/16" MINIMUM DIAMETER BORE. A MINIMUM OF TWO BEARINGS PER SHAFT WITH A LOAD RATING OF 1,650 LBS. EACH SHALL BE USED. GREASE FITTINGS SHALL BE PROVIDED TO ALLOW RELUBRICATION OF THE CUTTER SHAFT BEARINGS. CUTTER SHAFT BEARING HOUSING: BEARING HOUSINGS SHALL BE ATTACHED TO THE TWO SIDE SKIRTS OF THE CUTTER SHAFT HOUSING. THE BEARING HOUSING SHALL ENCLOSE THE BEARING TO PREVENT FOREIGN MATERIAL FROM DAMAGING BEARINGS. BEARING GUARDS: THE CUTTER SHAFT HOUSING SHALL BE EQUIPPED WITH REPLACEABLE BUMPER GUARDS OVER EXPOSED SHAFT ENDS. DECK CONSTRUCTION: CUTTER SHAFT HOUSING SHALL BE A MINIMUM OF 10 GAUGE STEEL. SKID SHOES: SKID SHOES SHALL BE ATTACHED AT EACH END OF THE CUTTER HOUSING. WEAR PLATES SHALL BE REPLACEABLE. MINIMUM HEIGHT ADJUSTMENT: MINIMUM HEIGHT OF CUT SHALL BE 3/4" & SHALL BE ADJUSTABLE TO 6". HEIGHT SHALL BE MAINTAINED BY A SIX INCH DIAMETER FULL SPAN ROLLER. THE ROLLER SHALL BE SUPPORTED BY BEARINGS WITH 1 3/8" MINIMUM DIAMETER BORE WITH A LOAD RATING OF ONE TON MINIMUM EACH, AT 5 MPH. A RECESSED GREASE FITTING SHALL BE PROVIDED AT EACH END OF THE ROLLER TO ALLOW RELUBRICATION OF THE REAR ROLLER BEARINGS. REAR SECTION POWER: THE REAR SECTION MOWER SHALL BE GEAR DRIVEN FROM THE TRACTOR 540 PTO SHAFT. THE DRIVE SHAFT SHALL BE A MINIMUM OF 35R. THE GEAR BOX SHALL BE A MINIMUM OF 60 CONTINUOUS HP. POWER SHALL BE TRANSMITTED FROM THE OUTPUT DRIVE SHAFT TO THE CUTTER SHAFT THROUGH A V-BELT(S). THE V-BELT SHALL BE CONSTRUCTED WITH CORDS DESIGNED TO OPERATE WITH REVERSE BEND. THE ENTIRE DRIVE SYSTEM MUST BE SHIELDED. WING SECTION POWER: POWER FOR WING UNITS SHALL BE PROVIDED BY HYDRAULIC PISTON OR GEAR PUMPS & MOTORS. THE PUMPS SHALL BE POWERED DIRECTLY BY THE TRACTOR ENGINE (FRONT MOUNT). HYDRAULIC HOSE WITH A SAFETY RATING IF 4 TO 2 SHALL BE USED TO ROUTE THE FLUID FROM PUMP TO MOTOR BACK TO THE OIL RESERVOIR. ADDITIONAL OIL MUST BE PROVIDED IN EACH WING. EACH HYDRAULIC SYSTEM SHALL BE PROTECTED BY A HYDRAULIC RELIEF VALVE. THE TRACTOR 3 POINT HITCH SYSTEM SHALL BE USED TO RAISE AND LOWER THE REAR MOWER SECTION FROM CUTTING POSITION TO TRANSPORT POSITION. WING SECTION ATTACHMENT AND CONTROL: THE WING SECTIONS SHALL BE CONNECTED TO THE TRACTOR BY A LONGITUDINAL MEMBER FASTENED AT THE REAR AND FRONT OF THE TRACTOR. POSITION CONTROL FOR WINGS SHALL BE PROVIDED BY HYDRAULIC CYLINDERS. ONE CYLINDER SHALL BE FOR VERTICAL LIFT WITH A MINIMUM STROKE OF 6" PROVIDING A MINIMUM VERTICAL ARC FROM 45 DEGREES DOWN TO 90 DEGREES UP. TILT CYLINDER SHALL HAVE A MINIMUM STROKE OF 9" PROVIDING A MINIMUM HEIGHT RANGE OF 4" BELOW GRADE TO 14" ABOVE GRADE ALLOWING CURB HEIGHT MOWING FROM STREET. POWER FOR POSITIONING CYLINDER SHALL BE HYDRAULIC. PRESSURE SAFETY FACTOR FOR THE CONTROL SYSTEM HOSES SHALL BE 4 TO 1. CONTROLS FOR THE POSITIONING CYLINDERS SHALL BE LOCATED WITHIN EACH REACH OF THE OPERATOR. EACH POSITION OF THE HYDRAULIC POSITIONING SYSTEM SHALL BE PROTECTED BY A HYDRAULIC RELIEF VALVE OR AN APPROVED EQUAL THE HYDRAULIC POSITIONING VALVE SHALL HAVE A DETENT POSITION ALLOWING THE WING SECTION TO FOLLOW THE CONTOUR OF THE GROUND WITHOUT OPERATOR CONTROL. WING CUTTER SHAFT CONTROL VALVE: EACH WING CUTTER SHAFT SHALL BE CONTROLLED BY AN ELECTRIC SWITCH CONTROLLING AN ELECTRIC SOLENOID VALVE OR AN APPROVED EQUAL. THIS VALVE SHALL DIRECT THE FLOW OF THE HYDRAULIC FLUID FROM THE PUMP TO THE MOTOR OR BACK TO THE HYDRAULIC TANK. HYDRAULIC PUMPS: THE PUMPS FOR THE WING SECTIONS SHALL BE POWERED BY THE ENGINE CRANK SHAFT. THE RESERVOIR(S) SHALL BE EQUIPPED WITH A REPLACEABLE FILTER, TEMPERATURE GAUGE AND OIL QUANTITY INDICATOR. DEFLECTOR CURTAIN: EACH MOWER SECTION SHALL BE EQUIPPED WITH A REPLACEABLE, FULL SPAN, REAR RUBBER/FABRIC CURTAIN TO PROVIDE

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DOWNWARD DEFLECTION OF DEBRIS. HYDRAULIC DRIVE PROTECTION: A HEAVY BUMPER SHALL BE PROVIDED. THIS BUMPER SHALL SERVE AS COLLISION PROTECTION FOR THE HYDRAULIC DRIVE COMPONENTS.

\*\*\*\*\* SPECIFICATION #020E16 \*\*\*\*\*

NEW LATEST MODEL TRACTOR POWERED, RAIL MOUNTED, ARTICULATED BOOM TREE AND BRUSH CUTTER:

GENERAL DESCRIPTION:

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THIS SPECIFICATION COVERS A HYDRAULICALLY POWERED 20-23 FT. ARTICULATED BOOM UNIT THAT SHALL BE DESIGNED TO MOUNT ON A 5,000 LB OR LARGER TRACTOR. THE UNIT SHALL BE CAPABLE OF CUTTING TREE LIMBS TO 4" IN DIAMETER. THE MAIN BOOM OF THE CUTTER UNIT SHALL BE MOUNTED BETWEEN THE FRONT AND REAR WHEELS AND TO THE RIGHT SIDE OF THE POWER UNIT AND SHALL BE SUPPORTED BY TWO RAIL ASSEMBLIES. IN THE STANDARD CONFIGURATION, THE BOOM SHALL SUPPORT THE CUTTER HEAD AND PROVIDE MOVEMENT VERTICALLY AND HORIZONTALLY THROUGH ARCS TO BE STATED SPECIFICALLY. THE POSITION OF THE CUTTER HEAD SHALL BE CONTROLLED COMPLETELY FROM THE OPERATOR'S POSITION WITH HYDRAULIC VALVES. THE HYDRAULIC CONTROL SYSTEM OF THIS UNIT SHALL BE SEPARATE FROM THE TRACTOR HYDRAULIC SYSTEM AND THE CUTTER HEAD HYDRAULIC CIRCUIT. FULL POWER SHALL BE AVAILABLE TO THE CUTTER HEAD EVEN WHILE THE HEAD IS BEING POSITIONED WITH THE BOOM CONTROL HYDRAULIC CIRCUIT. EACH SECTION OF THE HYDRAULIC SYSTEM SHALL HAVE PRESSURE RELIEF VALVES TO ALLOW EXCESSIVE HYDRAULIC PRESSURE TO BE RELEASED TO PREVENT DAMAGE TO THE UNIT IN THE EVENT OBSTRUCTIONS ARE ENCOUNTERED.

CUTTER HEAD:

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THE CUTTINGHEAD FOR THIS UNIT WILL BE A SAW BLADE TREE LIMB CUTTER:

CUTTING WIDTH: 7 1/2'  
 HYDRAULIC MOTOR: 38 HP  
 BLADES: 4 EACH 26" DIAMETER, 3/16" THICK, 60 TEETH PER BLADE  
 MOTOR MOUNT PLATE: 3/8" STEEL  
 BELT TO BE TENSION ADJUSTABLE.  
 PRE-LOADED TAPERED ROLLER BEARINGS.  
 REAR SAFETY SHIELD: 10 GAUGE

NOTE: INCLUDE TWO (2) SETS OF BLADES WITH HEAD.

BOOM:

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THE CUTTER HEAD SHALL BE ATTACHED TO THE BOOM ARM (2 PIECE) WITH GRADE 8 BOLTS THROUGH A HINGED ARRANGEMENT THAT WILL ALLOW ANGULAR MOVEMENT BETWEEN THE HEAD AND THE BOOM OF 220 DEGREES MINIMUM. THE ARTICULATED BOOM SHALL BE ATTACHED TO THE TRACTOR WITH PINS IN SUCH A MANNER THAT WILL ALLOW A TOTAL HORIZONTAL MOVEMENT OF 120 DEGREES MINIMUM. THE VERTICAL AND HORIZONTAL MOVEMENT OF THE CUTTER HEAD SHALL BE ACHIEVED BY USE OF HYDRAULIC CONTROL VALVES WITH THE HANDLES WITHIN EASY REACH OF THE OPERATOR SEATED IN THE OPERATOR POSITION. ONLY HYDRAULIC ACTION SHALL BE REQUIRED TO ACHIEVE THESE CUTTER MOVEMENTS. THE INNER BOOM WITH BE AT LEAST 11" X 6", THE OUTER BOOM WILL BE AT LEAST 6.5" X 5". GRADE 50 STEEL. BOOM KING POST WILL HAVE A MINIMUM 2.5" DIAMETER UNIFORM SHAFT WITH 3" OD, TAPPERED ROLLER BEARINGS WITH GREASEABLE BUSHINGS. A BOOM REST WILL BE PROVIDED FOR TRANSPORTATION MODE BOOM TO BE CARRIED IN REAR POSITION.

HOSES:

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THE HYDRAULIC HOSES USED ON ALL PRESSURE SECTIONS OF THIS UNIT SHALL BE OF DOUBLE WIRE BRAID CONSTRUCTION WITH A RUBBER COVER. THE HOSES SHALL HAVE A MINIMUM BURST PRESSURE OF FOUR TIMES WORKING PRES-SURE, AND SHALL BE ROUTED THROUGH INTERIOR OF BOOM OUTER TUBING.

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CUTTER VALVE:

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THE CUTTER VALVE SHALL BE A SOLENOID REMOTE CONTROLLED OPERATED VALVE. IT SHALL BE LOCATED OUTSIDE OF THE OPERATOR'S WORK STATION TO PROVIDE SAFETY AND OPERATOR COMFORT. THE CUTTER VALVE SHALL BE OPERATED BY A PUSH-PULL ELECTRIC SWITCH WITH A 1 3/8" DIA RED-COLORED ACTUATOR. THIS SWITCH WILL PREVENT THE TRACTOR ENGINE FROM STARTING IF THE CUTTER BLADES ARE ENGAGED. THE CUTTER HEAD CONTROL VALVE SHALL HAVE A RELIEF VALVE INSTALLED WITH A PRESSURE SETTING OF 2,000 PSI. WHEN IN THE "OFF" POSITION, THE CUTTER VALVE SHALL ROUTE THE OIL DIRECTLY TO THE HYDRAULIC TANK.

CONTROL VALVE:

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THE CONTROL VALVE SHALL BE A FOUR SPOOL VALVE RATED AT 20 GPM. IT SHALL HAVE FLOAT OPERATION FOR THE BOOM LIFT AND THE MOWER TILT SPOOLS. THE INDIVIDUAL CYLINDERS WILL BE PROTECTED FROM OVERLOAD BY WORK PART RELIEF VALVES. THE BOOM SWING AND BREAKAWAY PROTECTION WILL BE CONTROLLED BY THE RELIEF VALVE IN THE SWING SPOOL SEGMENT.

PUMP:

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THE HYDRAULIC PUMP TO POWER THE BOOM MOVEMENTS AND THE CUTTER BLADES SHALL BE ATTACHED TO THE VEHICLE CRANKSHAFT. THE PUMP SHALL BE A TWO SECTION DESIGN WITH ONE SECTION PROVIDING POWER TO THE CUTTER HEAD AND ANOTHER SECTION PROVIDING POWER TO THE BOOM MOVEMENTS. THE TWO SECTION PUMP SHALL BE RATED AT 42 GALLONS PER MINUTE. THE PUMP SHALL HAVE THE CAPACITY TO ABSORB AT LEAST 184 FT. LBS OF TORQUE. THE TANK CONTAINING THE HYDRAULIC FLUID FOR THE UNIT SHALL BE SEPARATE FROM THE POWER VEHICLE. AT NO POINT SHALL THE CUTTER UNIT AND THE POWER VEHICLE USE THE SAME HYDRAULIC SYSTEM.

MOUNTING:

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THE MAINFRAME WHICH SUPPORTS THE TURNING ARM SHALL BE SUSPENDED BENEATH THE TRACTOR. THE MAINFRAME SHALL FORM A 12" X 5" BOX CHANNEL CONSTRUCTED FROM 5/8" ASTM A36 (80,000 LB. PSI MAX TENSILE) NO FRAME WORK SHALL EXTEND ABOVE OR OVER THE HOOD. A SELF ADJUSTING AXLE STABILIZER SYSTEM SHALL PROVIDE COUNTER STABILITY FOR THE ARTICULATED BOOM.

NOTE: 1300 LBS. MINIMUM WHEEL WEIGHTS TO BE MOUNTED IN LEFT REAR WHEEL AND LEFT REAR TIRE TO BE FILLED WITH CALCIUM CHLORIDE.

SAFETY CAGE:

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A SAFETY SCREEN SHALL BE INSTALLED ON RIGHT SIDE OF THE CAB INSTALLED IN A MANNER TO ALLOW EASY CLEANING OF THE CAB WINDOWS AND NORMAL TRACTOR MAINTENANCE. THE SCREEN SHOULD BE A 3/8" LEXAN WINDOW COVER.

RESERVOIR:

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THE HYDRAULIC BOOM MOUNTED UNIT SHALL HAVE A 45 GALLON HYDRAULIC RESERVOIR MOUNTED LEFT OF CENTER OF THE POWER UNIT. THE TANK WILL HAVE A 10 MICRO 95 GPM FULL FLOW FILTER AND THE SUCTION LINE WILL HAVE A 100 MESH FILTER. VISUAL SIGHT GLASS TO CHECK FLUID LEVEL.

WEIGHT:

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THE WEIGHT OF THE UNIT EXCLUDING HYDRAULIC OIL AND TRACTOR TRACTOR SHALL BE APPROXIMATELY 4,400 LBS.

OPTIONAL CUTTING HEADS:



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OPTION #1 -

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SICKLE BAR LIMB CUTTER HEAD

- CUTTER

WIDTH: FIVE FT. (60") MIN.  
 BLADE: 5/8" T-1 STEEL  
 BLADE CYCLE: 60 CYCLES PER MINUTE  
 OPERATING PRESSURE: 1300 PSI  
 WEIGHT APPROXIMATELY 440 CBS

OPTION #2 -

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FLAIL AXE CUTTER HEAD

- CUTTER HEAD WIDTH: 49" MINIMUM
- SHAFT BEARINGS: 2" ID MIN., DOUBLE ROW ROLLER BEARING, SELF-ALIGNING, GREASEABLE.
- HYDRAULIC MOTOR: STEEL GEAR, AT LEAST 64 HP; 2,500 RPM; 2,500 PSI; DOUBLE V GROOVE BELTS
- CUTTER SHAFT SPEED: 1,650 RPM
- HEAVY DUTY STEEL SHROUD, MIN. 3/8" WALLS, 48" LONG
- CUTTER BLADES ARE A MINIMUM WEIGHT OF 32 OZ. HIGH STRENGTH ALLOY STEEL.
- NUMBER OF CUTTER BLADES: MINIMUM OF 16
- REAR ROLLER: MINIMUM 5-1/2" DIAMETER, GREASEABLE BALL BEARING

MOTOR:

A HYDRAULIC, REBUILDABLE, GEAR TYPE MOTOR SHALL PROVIDE POWER TO THE CUTTER BLADES. HYDRAULIC OIL SHALL BE PROVIDED TO THE MOTOR, TO PREVENT CAVITATION, AS THE MOTOR DECELERATES. THE HYDRAULIC MOTOR SYSTEM SHALL BE DESIGNED TO COMPLETELY STOP WITHIN 60 SECONDS AFTER THE CUTTER VALVE IS SWITCHED TO "OFF". NO SIDE LOADS SHALL BE IMPOSED ON THE OUTPUT SHAFT OF THE MOTOR AND THE MOTOR SHALL BE FASTENED SECURELY TO THE SPINDLE HOUSING TO ELIMINATE SHAFT MISALIGNMENT.

OPTION #3:

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ROTARY CUTTER HEAD

THE CUTTING HEAD DESIGNED TO MEET THIS SPECIFICATION SHALL BE A BOOM AXE HD ROTARY BRUSH CUTTER HEAD:

- DECK:  
 WIDTH: 50" OR 60" MAXIMUM (TO BE SPECIFIED AT TIME OF ORDER)
- MATERIAL:  
 DECK: 10 GAUGE  
 SIDES: 3/8"  
 REINFORCEMENT: TOP OF DECK 3/8" X 3" FLAT BAR X FRAME WITH REINFORCED SPINDLE MOUNT PLATE 1/2" X 12" X 20" LONG AND BOTTOM PLATE 1/2" X 9" X 9".  
 REPLACEMENT FULL LENGTH SKID SHOES.  
 DECK ROTATION - 220 DEGREES.
- SPINDLE:  
 4 1/2" X 9" ALLOY STEEL-SPLINED  
 BEARINGS - TAPERED ROLLER 2" ID TOP AND 2 5/8" ID BOTTOM IN OIL OR GREASE WITH GREASE FITTING - CAST STEEL UNIBODY.
- MOTOR TO SPINDLE DRIVE:  
 SPLINED, DIRECT DRIVE, ENCLOSED  
 (SPECIALLY EXCLUDING CHAIN OR DODGE COUPLES)
- BLADE BAR & BLADES:  
 3 LEAF, STACKED AND BOLTED

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- BOTTOM LEAF - 41 3/4 X 5" X 7/8" T-1 STEEL
- CENTER LEAF - 29 5/16" X 5" X 7/8" STEEL
- TOP LEAF - 16 7/8" X 5" X 7/8" STEEL.
- BLADES:
  - FULL SWING (360 DEGREES)
  - DIMENSIONS - 5/8" X 5" X 14 5/8"
  - DOUBLE EDGE, TEMPERED STEEL
  - BLADE BOLTS - HEAT TREATED, 1 1/8" X3" SHOULDERED (GRADE 8) WITH CASTELLATED NUT, LOCK WASHER, AND ROLL PIN.
- MOTOR:
  - STEEL GEAR, REBUILDABLE
  - MAXIMUM RATING - 90 HP, 2500 RPM, 2500 PSI
  - SPINDLE RPM - 1150 AT 1800 ENGINE RPM.
- SAFETY SHIELDS:
  - FRONT SHIELD - ANGLED FRAME WITH METAL SPRING-LOADED, RETRACTABLE.
  - REAR SHIELD - 3 PLY RUBBER BELTING FULL LENGTH (DOUBLE THICKNESS).

MOTOR:

A HYDRAULIC, REBUILDABLE, GEAR TYPE MOTOR SHALL PROVIDE POWER TO THE CUTTER BLADES. HYDRAULIC OIL SHALL BE PROVIDED TO THE MOTOR, TO PREVENT CAVITATION, AS THE MOTOR DECELERATES. THE HYDRAULIC MOTOR SYSTEM SHALL BE DESIGNED TO COMPLETELY STOP WITHIN 60 SECONDS AFTER THE CUTTER VALVE IS SWITCHED TO "OFF". NO SIDE LOADS SHALL BE IMPOSED ON THE OUTPUT SHAFT OF THE MOTOR AND THE MOTOR SHALL BE FASTENED SECURELY TO THE SPINDLE HOUSING TO ELIMINATE SHAFT MISALIGNMENT.

\*\*\*\*\* SPECIFICATIONS 020E18 \*\*\*\*\*

GENERAL -

IT IS THE PURPOSE OF THE FOLLOWING SPECIFICATIONS TO DESCRIBE A HYDRAULIC DRIVEN ROTARY BOOM MOWER WHICH HAS A 23' REAR FOLD ARTICULATING BOOM MOWER THAT WILL TRAVEL WITHIN THE 8'6" LEGAL TRANSPORT WIDTH. WHICH SHALL MOW FORWARD AND RIGHT OF THE RIGHT REAR TIRE AND EXTEND BY MEANS OF AN ARTICULATED TWO-SECTION BOOM. THE UNIT WILL BE THE MANUFACTURER'S CURRENT PRODUCTION MODEL, MEETING OR EXCEEDING THE TERMS OF THESE SPECIFICATIONS. THE UNIT SHALL BE MANUFACTURER'S HEAVIEST DUTY MODEL AVAILABLE. THE VENDOR SHALL GUARANTEE THAT A STOCK OF COMPONENT PARTS BE AVAILABLE AT A LOCATION CONVENIENT TO THE USER. FOR ANY OFFER TO BE CONSIDERED, ALL ITEMS MUST BE OF A STANDARD PRODUCTION MODEL, NOT MODIFIED FOR BID PURPOSES. ALL DEVIATIONS MUST BE DETAILED AND EXPLAINED IN FULL.

UNIT SHALL BE TESTED TO MEET ALL APPLICABLE ANSI, ASAE, SAE, J232 TEST STANDARD.

THIS UNIT SHALL BE CONSTRUCTED TO INTERCHANGE WITH THE FOLLOWING:

- 50" ROTARY BOOM MOWER (OR INTERCHANGEABLE SAW BLADE)
- 60" ROTARY BOOM MOWER
- 50" FLAIL BOOM MOWER
- 63" BOOM FLAIL MOWER
- 22" ROTARY BOOM DITCHER

CUTTING ASSEMBLY SHALL HAVE THE FOLLOWING REACH: MOWING HEIGHT SHALL BE 19.5', DOWN 13'2" AND OUT 22'8" (50" ROTARY BOOM). EACH SHALL BE MEASURED FROM TRACTOR CENTERLINE AND MAY VARY DEPENDING UPON TRACTOR AND/OR TIRE CONFIGURATION.

MAINFRAME -

MAIN SIDE SUPPORTS MUST BE 5/8" X 16.75" X 19.5" STEEL CONNECTED UNDER TRACTOR BY 3/4" X 5" X 13-1/4" STEEL WELDED CHANNEL AND GUSSETED ON EACH SIDE. NO OVER HOOD BRACE TO OBSTRUCT VISIBILITY. SECURED TO TRACTOR BY 20 MM GRADE 8 BOLTS AND BRACED TO ABSORB SIDE TORQUE AND

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IMPACT OF SEVERE APPLICATIONS.

TRACTOR MUST BE APPROVED BY MOWER MANUFACTURER.

SPIN ON OIL FILTER AND DRY TYPE AIR CLEANER

PRIMARY BOOM -

- \* MINIMUM OF 110,000 PSI, 8" X 6" STRUCTURAL TUBE
- \* BOOM IS SUPPORTED BY A GREASELESS PLAIN BEARING
- \* PRESSURE AND RETURN LINES WILL BE PREFORMED STEEL TUBES WITH HOSES AT PIVOT POINTS AND MOUNTED TO BACK OF BOOM
- \* HORIZONTAL PIN SHALL BE HARDENED AND HOUSED IN GARLOCK BEARINGS
- \* HORIZONTAL CYLINDER SHALL BE DOUBLE ACTING, INTEGRAL END STOP ON FORWARD MOVEMENT, WELDED INDUSTRIAL TYPE. BOOM SHALL MOVE 40 DEGREES FORWARD AND 90 DEGREES REARWARD WITH LIMITED RELIEF PROTECTION, WITH BUMPER STOP.
- \* TOP MOUNTED SINGLE ACTING LIFT CYLINDER SHALL HAVE A NITROGEN ACCUMULATOR AND AUTO CUSHIONING DEVICE.
- \* CYLINDER ENDS HAVE REPLACEABLE BEARINGS AND ARE GREASEABLE.

SECONDARY BOOM -

- \* MINIMUM OF 110,000 PSI, 6" X 4" STRUCTURAL TUBE
- \* GREASEABLE SPHERICAL BEARING ON HYDRAULIC CYLINDER ROD ENDS
- \* PRESSURE AND RETURN LINES ARE PREFORMED STEEL TUBES WITH HOSES AT PIVOT POINTS AND MOUNTED TO REAR OF BOOM
- \* BOOM SHALL PIVOT ON GREASELESS PLAIN BEARINGS
- \* BOOM SHALL PIVOT FORWARD AND REARWARD 80 DEGREES, IN AND OUT 145 DEGREES, WITH LIMITED RELIEF PROTECTION AND BUMPER STOP
- \* CYLINDERS SHALL BE WELDED, DOUBLE ACTING AND MOUNTED TO TOP OF BOOM

HYDRAULICS -

- \* RESERVOIR SHALL BE 30 GALLONS, INTANK FILTER REATED AT 75 GPM, 10 MICRON, 200 BETA, FIBERGLASS ELEMENT, WITH BYPASS, RESTRICTION GAUGE, MINIMUM (1) ONE PSI PRESSURE AT SUCTION OUTLET AND HAVE BALL VALVE AT SUCTION LINE
- \* SUCTION HOSE SHALL BE UNRESTRICTED 1.25" INSIDE DIAMETER (SPECIFICALLY EXCLUDING SUCTION FILTERS AND SCREENS) PRESSURE AND RETURN LINES WILL BE UNRESTRICTED 1" INSIDE DIAMETER WITH (4) FOUR TIMES WORKING PRESSURE
- \* HYDRAULIC PRESSURE CONNECTIONS SHALL MEET SAE O-RING AND JIC STANDARDS
- \* PUMP SHALL BE FRONT MOUNTED, CAST STEEL HOUSING AND STEEL GEARS, RATED AT 3250 PSI, 45 GPM AND 98 INPUT HP
- \* PUMP DRIVESHAFT RATED NOT LESS THAN 180 HP
- \* MOTOR SHALL HAVE CAST STEEL HOUSING WITH STEEL GEARS AND RATED FOR 99 HP
- \* MOWER CONTROL VALVE IS ELECTRICALLY CONTROLLED, PILOT OPERATED, FLOATING SPOOL WITH STARTER LOCKOUT AND WILL NOT CAUSE RESTRICTION TO GENERATE DRIFT WHILE IN THE OFF POSITION
- \* MOWER CONTROL VALVE IS NON-RESTRICTIVE AND WILL BRING CUTTER ASSEMBLY TO STOP IN 7 SECONDS FROM FULL RPM
- \* OIL TO POWER BOOM ATTACHMENT SHALL NOT PASS THROUGH RESTRICTION CAUSING VALVE WHILE IN OPERATION

LIFT CONTROL VALVE -

- \* LIFT CONTROL VALVE SHALL BE SIX TAPERED, METERED SPOOLS, EQUIPPED WITH TWELVE PILOT PRESSURE RELIEFS, PROTECTING ALL FUNCTIONS OR AN OPTIONAL FIVE BANK ELECTRO-HYDRAULIC, PROPORTIONAL, LOAD SENSING, WITH SINGLE LEVER JOYSTICK CONTROLLER AND MANUAL OVER-RIDE AT OPERATORS POSITION
- \* TRACTOR HYDRAULICS SHALL BE USED FOR MOWER'S LIFT SYSTEM

STANDARD FEATURES -

- \* COUNTER WEIGHTS SHALL BE INSTALLED. LEFT REAR TIRE WILL BE CALCIUM FILLED AND NO LESS THAN 1,700 POUNDS WEIGHT, INSERTED INTO WHEEL (SPECIFICALLY EXCLUDING FRAME MOUNTED WEIGHT)

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INVITATION TO BID

- \* PROTECTIVE SCREEN SHALL BE ATTACHED TO THE RIGHT HAND OPERATOR DOOR AND SHALL BE CONSTRUCTED OF 3/8" POLYCARBONATE, WINDOW SHALL BE INSTALLED INTO THE ORIGINAL CAB WINDOW.
- \* AN INTEGRAL BOOM REST SHALL SUPPORT BOOM IN TRAVEL AND TRANSPORT POSITION, BOOM SHALL BE PROTECTED BY BUMPER STOPS, SHALL NOT OBSTRUCT THREE POINT HITCH
- \* UNIT SHALL TRAVEL AND TRANSPORT AND LOCK IN TRANSPORT WIDTH 8'6" OR LESS, OVERALL HEIGHT SHALL BE 10'5" OR LESS.

STANDARD FEATURES -

THE MANUFACTURER SHALL FURNISH PARTS AND OPERATION MANUALS FOR THE UNIT(S) BID. THE MANUFACTURER SHALL ALSO GUARANTEE EQUIPMENT AGAINST DEFECTS IN WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE (1) YEAR ON THE MOWER.

OPTION ITEMS TO GO WITH BASE UNIT ABOVE:

1. 50" ROTARY BOOM MOWER HEAD

A. CUTTING HEAD -

- \* SHALL BE CONSTRUCTED OF 110,000 PSI STEEL 1/8" DECK AND 1/4" THICK SIDE WALLS AND (4) FOUR TRAPEZOIDAL FORMED 50,000 PSI STEEL REINFORCEMENTS
- \* SHALL HAVE FULL LENGTH REPLACEABLE ABRASION RESISTANT SKID SHOES
- \* RUBBER SAFETY SHIELD SHALL BE BOLTED TO BACK SIDE OF DECK
- \* SAFETY SHIELD WILL OPERATE HYDRAULICALLY FROM OPERATORS POSITION
- \* HEAD SHALL WEIGH NO LESS THAN 785 POUNDS
- \* HEAD SHALL HAVE 50" OF ACTUAL CUT

B. SPINDLE -

- \* SPINDLE SHALL BE (1) ONE PIECE FORGED ALLOY STEEL, 7-1/4" DIAMETER AND 10-7/8" OVER ALL LENGTH WITH A 2-5/8" I.D. LOWER BEARING AND 2" UPPER BEARING
- \* SPINDLE SHALL BE ATTACHED TO HYDRAULIC MOTOR BY A FLEXIBLE COUPLE AND DUST
- \* SPINDLE ASSEMBLY MOUNTED TO DECK TO ABSORB 240,000 POUNDS OF SHEAR STRENGTH AND DISTRIBUTE LOAD OVER 169 SQUARE INCH AREA
- \* SPINDLE SHALL HAVE WIRE WRAP PROTECTION
- \* SPINDLE SHALL BE MOUNTED IN SEALED DOUBLE TAPERED ROLLER BEARINGS AND OIL BATH
- \* SPINDLE WILL ROTATE MINIMUM OF 1,450 RPM

C. KNIFE CARRIER -

- \* SHALL BE ONE PIECE, DYNAMICALLY BALANCED (PER ISO QUALITY G2.5 SPEC), 50,000 PSI YIELD STEEL DISH, 5/8" X 28-5/8" DIAMETER WITH A 40 DEGREE FORMED OUTER EDGE EXTENDING OUT 3-5/8" AND ATTACHED TO SPINDLE WITH (6) SIX 5/8" X 1-3/4", GRADE 8 BOLTS
- \* DISH SHALL HAVE NO STRUCTURAL WELDS WITH OFFSET CENTER TO PROTECT SPINDLE BOLTS.
- \* SHALL ACCOMMODATE TWO, THREE, FOUR, OR SIX 1/2" X 5 X 18-3/4", 360 DEGREE SWINGING, SINGLE EDGE, BRUSH KNIVES OR OPTIONAL GRASS KNIVES
- \* KNIVES SHALL BE ATTACHED BY A 1-3/4" X 3-3/8" SHOULDERED AND KEYED BOLTS, BACKED BY T-1 SPACERS AND HEX LOCK NUTS.

2. 48" SAW BLADE -

- \* SHALL NOT BE LESS THAN 48 INCHES OUTSIDE DIAMETER.
- \* THICKNESS SHALL NOT BE LESS THAN 3/8 INCHES.
- \* A CENTERING PILOT SHALL BE PROVIDED.
- \* SHALL HAVE A MINIMUM OF SIX (6) MOUNTING BOLT HOLES.
- \* CLAMPING ARBOR SHALL BE PROVIDED.
- \* SHALL HAVE 30 OR MORE CARBIDE TIPPED TEETH.
- \* INDIVIDUAL TEETH SHALL BE REPLACEABLE.
- \* TEETH SHALL BE MACHINED FIT TO BLADE.

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- \* TEETH SHALL HAVE A REPLACEABLE INDUSTRIAL GRADE CARBIDE TIP.
- \* TOOTH REPLACEMENT TOOL SHALL BE PROVIDED.
- \* 1 SET OF REPLACEMENT TEETH SHALL BE PROVIDED.
- \* 1 EACH SHARPENING TOOL SHALL BE PROVIDED.
- 3. MANUFACTURER'S STANDARD 60" ROTARY MOWER HEAD.
- 4. MANUFACTURER'S STANDARD 50" FLAIL MOWER HEAD.
- 5. MANUFACTURER'S STANDARD 63" FLAIL MOWER HEAD.
- 6. MANUFACTURER'S STANDARD 22" ROTARY BOOM DITCHER.

\*\*\*\*\* SPECIFICATIONS 020E19 \*\*\*\*\*

BOOM MOWER WITH SINGLE 48" SAW BLADE HEAD AND OPTIONAL ROTARY CUTTER DISK ASSEMBLY.

GENERAL DESCRIPTION

REACH SHALL BE MEASURED FROM TRACTOR CENTERLINE AND MAY VARY DEPENDING UPON TRACTOR AND/OR TIRE CONFIGURATION. THE UNIT WILL BE MOUNTED ON A STATE PROVIDED CAB TRACTOR. THE UNIT SHALL BE CAPABLE OF CUTTING TREE LIMBS TO 6" IN DIAMETER. THE MAIN BOOM OF THE CUTTER UNIT SHALL BE MOUNTED BETWEEN THE FRONT AND REAR WHEELS AND TO THE RIGHT SIDE OF THE POWER UNIT. IN THE STANDARD CONFIGURATION, THE BOOM SHALL SUPPORT THE CUTTER HEAD AND PROVIDE MOVEMENT VERTICALLY AND HORIZONTALLY THROUGH ARCS TO BE STATED SPECIFICALLY. THE POSITION OF THE CUTTER HEAD SHALL BE CONTROLLED COMPLETELY FROM THE OPERATOR'S POSITION WITH HYDRAULIC VALVES. THE HYDRAULIC CONTROL SYSTEM OF THIS UNIT SHALL BE SEPARATE FROM THE TRACTOR HYDRAULIC CONTROL SYSTEM AND THE CUTTER HEAD HYDRAULIC CIRCUIT. EACH SECTION OF THE HYDRAULIC SYSTEM SHALL HAVE PRESSURE RELIEF VALVES TO ALLOW EXCESSIVE HYDRAULIC PRESSURE TO BE RELEASED TO PREVENT DAMAGE TO THE UNIT IN THE EVENT OBSTRUCTIONS ARE ENCOUNTERED.

CUTTER HEAD -

- \* SHALL BE ROTARY TYPE, HYDRAULICALLY DRIVE.
- \* SHALL HAVE 50" ACTUAL CUT.
- \* ROTATE 180 DEGREES WITH OUTER BOOM.
- \* HOUSING SHALL BE CONSTRUCTED OF 100,000 PSI STEEL.
- \* HOUSING REINFORCEMENTS SHALL BE CONSTRUCTED WITH TRAPEZOIDAL FORMED, 50,000 PSI STEEL, AT 4 LOCATIONS ON TOP OF HOUSING.
- \* SHALL HAVE FULL-LENGTH REPLACEABLE SKID SHOES ON THE INNER AND OUTER ENDS.
- \* SHALL HAVE AN ADJUSTABLE, HYDRAULIC RETRACTABLE SHIELD, SHIELDING CUTTER KNIVES, SPECIFICALLY EXCLUDING REMOVABLE SHIELDS, SPRING LOADED SHIELDS AND ANGLED FRAMED CUTTER HEADS.
- \* RUBBER DEFLECTOR SHIELD SHALL BE BOLTED TO THE REAR SIDE OF THE CUTTER HEAD DECK.
- \* ROTARY HEAD SHALL WEIGH NOT LESS THAN 785 POUNDS

SPINDLE ASSEMBLY -

- \* SHALL BE ONE PIECE, FORGED STEEL.
- \* SHALL BE 7" IN DIAMETER AT ITS LARGEST AREA, 10-7/8" LONG.
- \* SHALL BE SUPPORTED BY DOUBLE TAPERED ROLLER BEARINGS 3-1/4" X 2" IN DIAMETER, AND SPACED 5" BETWEEN BEARING CENTERS.
- \* BEARINGS SHALL BE SEALED IN OIL BATH.
- \* SHALL HAVE WIRE WRAP PROTECTION.
- \* HOUSING SHALL BE ATTACHED TO THE CUTTING HEAD SO AS TO ABSORB 240,000 POUNDS OF SHEAR STRENGTH AND DISTRIBUTE LOAD OVER A SQUARE OF 169 INCHES.
- \* HYDRAULIC MOTOR SHALL BE ATTACHED TO SPINDLE WITH A FLEXIBLE COUPLER WITH DUST COVER PROTECTION. (SPECIFICALLY EXCLUDED SHALL BE DIRECT-COUPLED MOTOR SPINDLE ASSEMBLY.)
- \* MAXIMUM BLADE TIP SPEED 19,000' PER MINUTE

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OPTIONAL SAW BLADE -

- \* SHALL NOT BE LESS THAN 48 INCHES OUTSIDE DIAMETER.
- \* THICKNESS SHALL NOT BE LESS THAN 3/8".
- \* A CENTERING PILOT HOLE SHALL BE PROVIDED.
- \* SHALL HAVE A MINIMUM OF SIX (6) MOUNTING BOLT HOLES.
- \* CLAMPING ARBOR SHALL BE PROVIDED.
- \* SHALL HAVE 30 OR MORE CARBIDE TIPPED TEETH.
- \* INDIVIDUAL TEETH SHALL BE REPLACEABLE.
- \* TEETH SHALL BE MACHINED FIT TO BLADE.
- \* TEETH SHALL HAVE A REPLACEABLE INDUSTRIAL GRADE CARBIDE TIP.
- \* TOOTH REPLACEMENT TOOL SHALL BE PROVIDED.
- \* 1 SET OF REPLACEMENT TEETH SHALL BE PROVIDED.
- \* 1 EACH SHARPENING TOOL SHALL BE PROVIDED.

KNIFE CARRIER ASSEMBLY -

- \* SHALL BE A DISHPAN (SPECIFICALLY EXCLUDING CUTTER-BAR ASSEMBLIES, EXCEPT ON 25 FOOT BOOM).
- \* DISH SHALL HAVE NO STRUCTURAL WELDS
- \* SHALL BE ONE PIECE, DYNAMICALLY BALANCED (PER ISO QUALITY G2.5 SPEC) 50,000 PSI YIELD STEEL DISH, 5/8" X 28-5/8" DIAMETER WITH A 5/8" X 1-3/4", GRADE 8 BOLTS
- \* SHALL HAVE AN OFFSET DISK TO PROTECT BOLTS.
- \* SHALL ACCOMMODATE TWO, THREE, FOUR, OR SIX 1/2" X 7 X 18-3/4", 360 DEGREE SWINGING, SINGLE EDGE, BRUSH KNIVES OR OPTIONAL GRASS KNIVES
- \* KNIVES SHALL BE ATTACHED BY 1-3/4" X 3-3/8" SHOULDERED AND KEYED BOLTS, BACKED BY T-1 SPACERS AND HEX LOCK NUTS

MAIN FRAME -

- \* SHALL ATTACH AND BE PROPERLY BRACED TO REAR AXLE, MID-HOUSING AND FRONT AXLE HOUSING TO ABSORB SIDE TORQUE AND IMPACT OF SEVERE APPLICATIONS.
- \* SHALL BE A SOLID MOUNT TYPE, WITH INTEGRAL MOUNTING FOR HYDRAULIC RESERVOIR ON LEFT SIDE AND ATTACHMENT MOUNTING ON RIGHT.

BOOM LIFT AND CONTROL -

- \* HYDRAULIC SYSTEM OIL SHALL BE COMPLETELY SEPARATE FROM DRIVE SYSTEM AND COMPATIBLE WITH TRACTORS HYDRAULIC SYSTEM, INCLUDING LOAD SENSING, PRESSURE COMPENSATED HYDRAULIC SYSTEMS.
- \* SHALL HAVE TWO DOUBLE-ACTING HYDRAULIC CYLINDERS AND ONE SINGLE ACTING HYDRAULIC CYLINDER WITH ACCUMULATOR.
- \* SHALL HAVE A HYDRAULICALLY OPERATED HORIZONTAL MANEUVERING CYLINDER FOR MOVEMENT OF CUTTER HEAD.
- \* SHALL HAVE THE CAPABILITY OF MOVING BOOM 26 DEGREES FORWARD AND 28 DEGREES REARWARD AND HAVE AUTOMATIC LIMITED RELIEF PROTECTION.
- \* LIFT CONTROL VALVE SHALL BE FOUR TAPERED SPOOLS OF THE METERING TYPE, EQUIPPED WITH EIGHT PILOT PRESSURE RELIEFS, PROTECTING ALL BOOM FUNCTIONS.

BOOM -

- \* INNER SHALL BE SUPPORTED BY A HARDENED PLAIN BEARING. THE BASE PLATE SHALL HAVE AN INTEGRAL SWING CYLINDER ATTACHMENT POINT WITH SPHERICAL BEARING AND BE CONSTRUCTED OF NOT LESS THAN 1" THICK.
- \* VERTICAL CYLINDER BASE MOUNTING SHALL BE CONSTRUCTED OF STEEL NOT LESS THAN 1", BUSHED WITH A GREASABLE, SPRING STEEL BUSHING.
- \* ALL CYLINDER MOUNTINGS SHALL BE REPLACEABLE HARDENED BUSHINGS, GREASABLE TYPE.
- \* INNER END SHALL HAVE REPLACEABLE STEEL-BACKED ACETAL BEARINGS WITH GREASE POCKETS.
- \* OUTER CYLINDER SHALL HAVE A SPERICAL BEARING ON THE ROD END.
- \* LIFT CYLINDERS SHALL BE MOUNTED ON TOP OF BOOM ARMS.
- \* INNER SHALL BE CONSTRUCTED OF NOT LESS THAN, 6" X 8", 1/4" STEEL.
- \* OUTER SHALL BE CONSTRUCTED OF NOT LESS THAN, 4" X 6", 1/4" STEEL.

HYDRAULIC DRIVE SYSTEM -

- \* RESERVOIR SHALL HAVE A MINIMUM CAPACITY OF 30 GALLONS. EQUIPPED

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WITH INTANK FILTER RATED AT 75 GPM, 25 MICRON ELEMENT, WITH RESTRICTION GAUGE. RESERVOIR SUCTION AND RETURN OUTLETS SHALL BE EQUIPPED WITH BALL VALVES.

- \* SUCTION LINE SHALL BE AN UNRESTRICTED 1.25" INSIDE DIAMETER. (SPECIFICALLY EXCLUDING SUCTION FILTERS AND SCREENS.)
- \* PRESSURE AND RETURN SYSTEM HOSES SHALL BE 1" UNRESTRICTED INSIDE DIAMETER. 1" HOSES SHALL HAVE A BURST PRESSURE 4 TIMES WORKING PRESSURE.
- \* PRESSURE, RETURN AND LIFT SYSTEM STEEL HYDRAULIC LINES SHALL BE MOUNTED AT REAR OF BOOM ARMS (HOSES/TUBING WILL NOT BE ALLOWED INSIDE BOOM ARMS).
- \* PUMP DRIVE SHAFT SHALL HAVE A RATING OF NOT LESS THAN 180 HP.
- \* PUMP AND MOTOR SHALL BE GEAR TYPE WITH CASE STEEL HOUSING AND STEEL GEARS. (SPECIFICALLY EXCLUDING ALUMINUM PUMPS AND MOTORS.)
- \* HYDRAULIC DRIVE SYSTEM SHALL PRODUCE NOT LESS THAN 3250 PSI AND 44 GPM AT 2400 RPM.
- \* OIL TO POWER CUTTER HEAD SHALL NOT PASS THROUGH A RESTRICTION-CAUSING VALVE, WHILE OPERATING CUTTERHEAD.
- \* VALVE SHALL BE ELECTRICALLY CONTROLLED PILOT OPERATED FLOATING SPOOL WITH STARTER LOCKOUT AND AUTOMATIC 10 SEC. SAFETY SHUT DOWN.
- \* VALVE SHALL NOT CAUSE RESTRICTION TO GENERATE DRIFT WHILE IN THE OFF POSITION.
- \* NO LIVE HYDRAULICS IN CAB.

JOY-STICK HYDRAULIC CONTROL SYSTEM -

- \* HYDRAULIC BOOM CUTTER MOWER CONTROL SYSTEM SHALL BE A SEALED CONTROL PANEL.
- \* CONTROL PANEL SHALL HAVE CUTTER MOWER ON/OFF SWITCH WITH INADVERTENT SAFETY START DEVICE AND RED LIGHT INDICATOR.
- \* CONTROL PANEL SHALL HAVE TRAVEL LOCK SWITCH, WHICH SHALL LOCK BOOM IN TRANSPORT POSITION.
- \* A CONTROL WILL BE PROVIDED, WHICH SHALL BE CAPABLE OF OPENING AND CLOSING SAFETY CUTTER SHIELD.
- \* LIFT CONTROL VALVE SHALL BE A FIVE BANK ELECTRO-HYDRAULIC PROPORTIONAL, LOAD SENSING SINGLE LEVER, FOUR AXIS JOY-STICK WITH TWO PROPORTIONAL THUMB ROLLERS.
- \* ALL ELECTRICAL WIRING SHALL BE ATTACHED TO TRACTOR ELECTRICAL SYSTEM.

STANDARD FEATURES -

- \* WHEEL WEIGHT SHALL WEIGH NOT LESS THAN 1,300 POUNDS FOR 21' BOOM, 1,700 POUNDS FOR 23" BOOM, 4,150 POUNDS FOR 25' BOOM, MOUNTED IN LEFT REAR WHEEL AND TIRE FILLED WITH CALCIUM CHLORIDE. (SPECIFICALLY EXCLUDING FRAME MOUNTED WEIGHT.)
- \* PROTECTIVE POLYCARBONATE SCREEN (EROPS) SHALL COVER OR REPLACE RIGHT HAND SIDE WINDOWS.
- \* THIS UNIT SHALL BE CONSTRUCTED TO INTERCHANGE WITH ANY AND ALL OF THE FOLLOWING: 50" ROTARY BOOM MOWER, 60" ROTARY BOOM MOWER, 50" FLAIL BOOM MOWER, 22" DITCHER HEAD ASSEMBLY, 48" SAW BLADE, OR 63" GRASS FLAIL MOWER. EXCEPTION: 25' CAN BE FURNISHED WITH 48" SAW BLADE AND 50" ROTARY HEAD.
- \* THE MANUFACTURER SHALL FURNISH PARTS AND OPERATION MANUALS FOR THE UNIT(S) BID. THE MANUFACTURER SHALL ALSO GUARANTEE EQUIPMENT AGAINST DEFECTS IN WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE (1) YEAR.

TRACTOR: END USER TO FURNISH TRACTOR APPROVED BY MOWER MANUFACTURER.

OPTION ITEMS TO GO WITH BASE UNIT ABOVE:

1. MANUFACTURER'S STANDARD 60" ROTARY MOWER HEAD.
2. MANUFACTURER'S STANDARD 50" FLAIL MOWER HEAD.
3. MANUFACTURER'S STANDARD 22" DITCHER HEAD.
4. MANUFACTURER'S STANDARD 48" SAW BLADE.
5. MANUFACTURER'S STANDARD 63" GRASS FLAIL MOWER HEAD.
6. DEDUCT MANUFACTURER'S STANDARD 50" ROTARY HEAD.

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INVITATION TO BID

\*\*\*\*\* SPECIFICATIONS 020E20 \*\*\*\*\*

BOOM MOWERS 20' 6", 23' AND 25'

GENERAL DESCRIPTION

REACH SHALL BE MEASURED FROM TRACTOR CENTERLINE AND MAY VARY DEPENDING UPON TRACTOR AND/OR TIRE CONFIGURATION. THE UNIT WILL BE MOUNTED ON A STATE PROVIDED CAB TRACTOR. THE UNIT SHALL BE CAPABLE OF CUTTING TREE LIMBS TO 6" IN DIAMETER. THE MAIN BOOM OF THE CUTTER UNIT SHALL BE MOUNTED BETWEEN THE FRONT AND REAR WHEELS AND TO THE RIGHT SIDE OF THE POWER UNIT. IN THE STANDARD CONFIGURATION, THE BOOM SHALL SUPPORT THE CUTTER HEAD AND PROVIDE MOVEMENT VERTICALLY AND HORIZONTALLY THROUGH ACRES TO BE STATED SPECIFICALLY. THE POSITION OF THE CUTTER HEAD SHALL BE CONTROLLED COMPLETELY FROM THE OPERATOR'S POSITION WITH HYDRAULIC CONTROL SYSTEM AND THE CUTTER HEAD HYDRAULIC CIRCUIT. EACH SECTION OF THE HYDRAULIC SYSTEM SHALL HAVE PRESSURE RELIEF VALVES TO ALLOW EXCESSIVE HYDRAULIC PRESSURE TO BE RELEASED TO PREVENT DAMAGE TO THE UNIT IN THE EVENT OBSTRUCTIONS ARE ENCOUNTERED.

OPTIONAL CUTTER HEAD -

- \* SHALL BE ROTARY TYPE, HYDRAULICALLY DRIVE.
- \* SHALL HAVE 50" ACTUAL CUT.
- \* ROTATE 180 DEGREES WITH OUTER BOOM.
- \* HOUSING SHALL BE CONSTRUCTED OF 100,000 PSI STEEL.
- \* HOUSING REINFORCEMENTS SHALL BE CONSTRUCTED WITH TRAPEZOIDAL FORMED, 50,000 PSI STEEL, AT 4 LOCATIONS ON TOP OF HOUSING.
- \* SHALL HAVE FULL-LENGTH REPLACEABLE SKID SHOES ON THE INNER AND OUTER ENDS.
- \* SHALL HAVE AN ADJUSTABLE, HYDRAULIC RETRACTABLE SHIELD, SHIELDING CUTTER KNIVES, SPECIFICALLY EXCLUDING REMOVABLE SHIELDS AND SPRING LOADED SHIELDS.
- \* RUBBER DEFLECTOR SHIELD SHALL BE BOLTED TO THE REAR SIDE OF THE CUTTER HEAD DECK.
- \* ROTARY HEAD SHALL WEIGH NOT LESS THAN 785 POUNDS

SPINDLE ASSEMBLY -

- \* SHALL BE ONE PIECE, FORGED STEEL.
- \* SHALL BE 7-1/2" IN DIAMETER AT ITS LARGEST AREA, 10-7/8" LONG.
- \* SHALL BE SUPPORTED BY DOUBLE TAPERED ROLLER BEARINGS 3-1/4" X 2" IN DIAMETER (MIN.), AND SPACED 5" BETWEEN BEARING CENTERS.
- \* BEARINGS SHALL BE SEALED IN OIL BATH OR HIGH SPEED GREASE.
- \* SHALL HAVE WIRE WRAP PROTECTION.
- \* HOUSING SHALL BE ATTACHED TO THE CUTTING HEAD SO AS TO ABSORB 240,000 POUNDS OF SHEAR STRENGTH AND DISTRIBUTE LOAD OVER A SQUARE OF 169 INCHES.
- \* HYDRAULIC MOTOR SHALL BE ATTACHED TO SPINDLE WITH A FLEXIBLE COUPLER WITH DUST COVER PROTECTION. (SPECIFICALLY EXCLUDED SHALL BE DIRECT-COUPLED MOTOR SPINDLE ASSEMBLY.)
- \* MINIMUM SPINDLE SPEED SHALL BE 1,750 RPM.

OPTIONAL SAW BLADE -

- \* SHALL NOT BE LESS THAN 48 INCHES OUTSIDE DIAMETER.
- \* THICKNESS SHALL NOT BE LESS THAN 3/8".
- \* A CENTERING PILOT HOLE SHALL BE PROVIDED.
- \* SHALL HAVE A MINIMUM OF SIX (6) MOUNTING BOLT HOLES.
- \* CLAMPING ARBOR SHALL BE PROVIDED.
- \* SHALL HAVE 30 OR MORE CARBIDE TIPPED TEETH.
- \* INDIVIDUAL TEETH SHALL BE REPLACEABLE.
- \* TEETH SHALL BE MACHINED FIT TO BLADE.
- \* TEETH SHALL HAVE A REPLACEABLE INDUSTRIAL GRADE CARBIDE TIP.
- \* TOOTH REPLACEMENT TOOL SHALL BE PROVIDED.
- \* 1 SET OF REPLACEMENT TEETH SHALL BE PROVIDED.



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- \* 1 EACH SHARPENING TOOL SHALL BE PROVIDED.

TRI-HEX DISH:

- \* CUTTING ASSEMBLY SHALL BE 23.25" SOLID 1" THICK STEEL WITH (3) RADIAL CUTOUTS AND (3) CASE HARDENED THREADED INSERTS WELDED INTO PLACE.
- \* SHALL ACCOMMODATE THREE, 1/2" X 5" X 17-1/2", (APPROX.), SINGLE EDGED, BRUSH KNOVES (OPTIONAL LIFT TYPE GRASS KNIVES SHALL BE AVAILABLE)(STATE MATERIAL, ASTM A370 CHARPY V-NOTCHE IMPACT TEST, AND HARDNESS).
- \* KNIVES SHALL BE CAPABLE OF 360 DEGREE PIVOT.
- \* KNIVES SHALL BE ATTACHED BY 1-1/8" DIAMETER BOLTS WITH A 1-1/4" SHOULDER (STATE BOLT MATERIAL AND HARDNESS).
- \* SHALL BE ATTACHED TO SPINDLE ASSEMBLY BY SIX - 5/8" X 1-3/4", GRADE 8 BOLTS, BOLTS SHALL BE PROTECTED BY A HARDENED MACHINED PROTECTOR.

MAIN FRAME -

- \* SHALL ATTACH AND BE PROPERLY BRACED TO REAL AXLE, MID-HOUSING AND FRONT AXLE HOUSING TO ABSORB SIDE TORQUE AND IMPACT OF SEVERE APPLICATIONS.
- \* SHALL BE A SOLID MOUNT TYPE, WITH INTEGRAL MOUNTING FOR HYDRAULIC RESERVOIR ON LEFT SIDE AND ATTACHMENT MOUNTING ON RIGHT.

BOOM LIFT AND CONTROL -

- \* HYDRAULIC SYSTEM OIL SHALL BE COMPLETELY SEPARATE FROM DRIVE SYSTEM AND COMPATIBLE WITH TRACTORS HYDRAULIC SYSTEM, INCLUDING LOAD SENSING, PRESSURE COMPENSATED HYDRAULIC SYSTEMS.
- \* SHALL HAVE TWO DOUBLE-ACTING HYDRAULIC CYLINDERS AND ONE SINGLE ACTING HYDRAULIC CYLINDER WITH ACCUMULATOR.
- \* SHALL HAVE A HYDRAULICALLY OPERATED HORIZONTAL MANEUVERING CYLINDER FOR MOVEMENT OF CUTTER HEAD.
- \* SHALL HAVE THE CAPABILITY OF MOVING BOOM 26 DEGREES FORWARD AND 28 DEGREES REARWARD AND HAVE AUTOMATIC LIMITED RELIEF PROTECTION.
- \* LIFT CONTROL VALVE SHALL BE FOUR TAPERED SPOOLS OF THE METERING TYPE, EQUIPPED WITH EIGHT PILOT PRESSURE RELIEFS, PROTECTING ALL BOOM FUNCTIONS.

BOOM -

- \* INNER SHALL BE SUPPORTED BY A HARDENED PLAIN BEARING. THE BASE PLATE SHALL HAVE AN INTEGRAL SWING CYLINDER ATTACHMENT POINT WITH SPHERICAL BEARING AND BE CONSTRUCTED OF NOT LESS THAN 1" THICK.
- \* VERTICAL CYLINDER BASE MOUNTING SHALL BE CONSTRUCTED OF STEEL NOT LESS THAN 1", BUSHED WITH A GREASABLE, SPRING STEEL BUSHING.
- \* ALL CYLINDER MOUNTINGS SHALL BE REPLACEABLE HARDENED BUSHINGS, GREASABLE TYPE.
- \* INNER END SHALL HAVE REPLACEABLE STEEL-BACKED ACETAL BEARINGS WITH GREASE POCKETS.
- \* OUTER CYLINDER SHALL HAVE A SPERICAL BEARING ON THE ROD END.
- \* LIFT CYLINDERS SHALL BE MOUNTED ON BOTTOM OF PRIMARY BOOM ARM.
- \* INNER SHALL BE CONSTRUCTED OF NOT LESS THAN, 6" X 8", 1/4" STEEL OR 6" X 6", 1/4" STEEL.
- \* OUTER SHALL BE CONSTRUCTED OF NOT LESS THAN, 4" X 6", 1/4" STEEL OR 5" X 5", 1/4" STEEL.

HYDRAULIC DRIVE SYSTEM -

- \* RESERVOIR SHALL HAVE A MINIMUM CAPACITY OF 65 GALLONS. EQUIPPED WITH INTANK FILTER RATED AT 75 GPM, 25 MICRON ELEMENT, WITH RESTRICTION GAUGE. RESERVOIR SUCTION AND RETURN OUTLETS SHALL BE EQUIPPED WITH BALL VALVES.
- \* SUCTION LINE SHALL BE AN UNRESTRICTED 1-1/2" INSIDE DIAMETER. (SPECIFICALLY EXCLUDING SUCTION FILTERS AND SCREENS.)
- \* PRESSURE AND RETURN SYSTEM HOSES SHALL BE 1" UNRESTRICTED INSIDE DIAMETER. 1" HOSES SHALL HAVE A BURST PRESSURE 4 TIMES WORKING PRESSURE.
- \* PRESSURE, RETURN AND LIFT SYSTEM STEEL HYDRAULIC LINES SHALL BE MOUNTED AT REAR OF BOOM ARMS (HOSES/TUBING WILL NOT BE ALLOWED

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INVITATION TO BID

- INSIDE BOOM ARMS).
- \* PUMP DRIVE SHAFT SHALL HAVE A RATING OF NOT LESS THAN 180 HP.
  - \* PUMP AND MOTOR SHALL BE GEAR TYPE WITH CASE STEEL HOUSING AND STEEL GEARS. (SPECIFICALLY EXCLUDING ALUMINUM PUMPS AND MOTORS.)
  - \* HYDRAULIC DRIVE SYSTEM SHALL PRODUCE NOT LESS THAN 3250 PSI AND 44 GPM AT 2400 RPM.
  - \* OIL TO POWER CUTTER HEAD SHALL NOT PASS THROUGH A RESTRICTION-CAUSING VALVE, WHILE OPERATING CUTTERHEAD.
  - \* VALVE SHALL BE ELECTRICALLY CONTROLLED PILOT OPERATED FLOATING SPOOL WITH STARTER LOCKOUT.
  - \* VALVE SHALL NOT CAUSE RESTRICTION TO GENERATE DRIFT WHILE IN THE OFF POSITION.
  - \* NO LIVE HYDRAULICS IN CAB.

JOY-STICK HYDRAULIC CONTROL SYSTEM -

- \* HYDRAULIC BOOM CUTTER MOWER CONTROL SYSTEM SHALL BE A SEALED CONTROL PANEL.
- \* CONTROL PANEL SHALL HAVE CUTTER MOWER ON/OFF SWITCH WITH INADVERTENT SAFETY START DEVICE AND RED LIGHT INDICATOR.
- \* CONTROL PANEL SHALL HAVE TRAVEL LOCK SWITCH, WHICH SHALL LOCK BOOM IN TRANSPORT POSITION.
- \* A CONTROL WILL BE PROVIDED, WHICH SHALL BE CAPABLE OF OPENING AND CLOSING SAFETY CUTTER SHIELD.
- \* LIFT CONTROL VALVE SHALL BE A FIVE BANK ELECTRO-HYDRAULIC PROPORTIONAL, LOAD SENSING SINGLE LEVER, FOUR AXIS JOY-STICK.
- \* ALL ELECTRICAL WIRING SHALL BE ATTACHED TO TRACTOR ELECTRICAL SYSTEM.

STANDARD FEATURES -

- \* WHEEL WEIGHT SHALL WEIGH NOT LESS THAN 1,400 POUNDS (MIN.), MOUNTED IN LEFT REAR WHEEL. (SPECIFICALLY EXCLUDING FRAME MOUNTED WEIGHT.)
- \* PROTECTIVE POLYCARBONATE SCREEN (EROPS) SHALL COVER OR REPLACE RIGHT HAND SIDE WINDOWS.
- \* THIS UNIT SHALL BE CONSTRUCTED TO INTERCHANGE WITH ANY AND ALL OF THE FOLLOWING: 50" ROTARY BOOM MOWER, 60" ROTARY BOOM MOWER OR 50" FLAIL BOOM MOWER.
- \* THE MANUFACTURER SHALL FURNISH PARTS AND OPERATION MANUALS FOR THE UNIT(S) BID. THE MANUFACTURER SHALL ALSO GUARANTEE EQUIPMENT AGAINST DEFECTS IN WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE (1) YEAR.

OPTION ITEMS TO GO WITH BASE UNIT ABOVE:

1. MANUFACTURER'S STANDARD 60" ROTARY MOWER HEAD.
2. MANUFACTURER'S STANDARD 50" FLAIL MOWER HEAD.

\*\*\*\*\* SPECIFICATIONS 020E21 \*\*\*\*\*  
TELESCOPING BOOM MOWER SPECIFICATIONS

22 TO 24' MID-MOUNTED, TELESCOPING, HYDRAULICALLY POWERED BOOM MOWER FOR CUTTING GRASS AND BRUSH ON ROADSIDES AND OTHER AREAS THAT ARE NOT ACCESSIBLE TO CONVENTIONAL MOWING EQUIPMENT. THE UNIT BID SHALL BE MANUFACTURE'S CURRENT PRODUCT MODEL THAT MEETS OR EXCEEDS THE FOLLOWING MINIMUM SPECIFICATIONS. ONLY A STANDARD PRODUCTION MACHINE CAN BE BID ON THESE SPECIFICATIONS AND AS A SUPPLIER WILL NOT BE ALLOWED TO MODIFY HIS STANDARD PRODUCTION UNIT IN ORDER TO MEET THESE SPECIFICATIONS.

FRAME & MOUNTING:

- \* THE UNIT FRAME SHALL BE MID-MOUNTED TO UNDERSIDE OF A SUITABLE SIZE TRACTOR UTILIZING A MODULAR CENTER WELDMENT WITH FRONT AND REAR ATTACHING RAILS. FRAME MOUNT SHALL PROVIDE FOR UNRESTRICTED MOVEMENT OF BOOM AND OFFER LIMITED OBSTRUCTIONS TO FORWARD VISION.
- \* FRAME SHALL BE OF MODULAR CONSTRUCTION FROM ALLOY STEEL AND SHALL

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- BE COMPLETELY BOLTED DURING INSTALLATION (NO WELDING).
- \* THE BOOM SHALL UTILIZE A SLEWING RING BEARING FOR BOOM FUNCTION. THE RING SHALL BE MATED BY MEANS OF A TURRET 2,700 LBS OF COUNTER WEIGHT INTEGRAL WITH FRAME SHALL BE REQUIRED. WHEEL WEIGHT SHALL BE CONFIGURED TO TRACTOR/BOOM COMBINATION.

BOOM FEATURES & CAPABILITIES:

BOOM FEATURES:

- \* STANDARD BOOM STRUCTURE SHALL BE MADE COMPLETELY OF HEAVY DUTY ALLOY STEEL AND CONSTRUCTED OF A DESIGNED, BOX SECTION GEOMETRY, FOR OPTIMUM STRENGTH TO WEIGHT RATIO.
- \* THE BOOM SHALL FEATURE THREE MAIN COMPONENTS; LIFT, OUTER DIPPER, AND TELESCOPIC SECTIONS.
- \* THE LIFT COMPONENT BOX SECTION SHALL BE A MINIMUM OF 20" TALL X 6" WIDE.
- \* THE OUTER DIPPER COMPONENT BOX SECTION SHALL BE A MINIMUM OF 11" TALL X 6" WIDE.
- \* THE TELESCOPIC BOX SECTION SHALL BE A MINIMUM OF 5" TALL X 5" WIDE, AND SHALL EXTEND OUT A MINIMUM OF 3'.
- \* THE TELESCOPIC SECTION SHALL PROVIDE ADJUSTABLE, LOW-FRICTION, SELF-LUBRICATED, SLIDE BEARINGS.
- \* MAIN PIVOTS SHALL UTILIZE 2" CHROME PINS WITH GREASEABLE, HARDENED STEEL BUSHINGS.

BOOM MOVEMENT:

- \* STANDARD BOOM FUNCTIONS SHALL FEATURE HORIZONTAL SWING, VERTICAL LIFT, DIPPER REACH, TELESCOPIC REACH, AND MOWER HEAD TILT.
  - \* BOOM SWING ANGLE SHALL BE CUSTOMIZED PER TRACTOR TO ACCOMMODATE BUTTING WITH 1' OF FROM TIRE.
  - \* BOOM SWING SHALL BE CONTROLLED BY TWO STANDARD DUAL ACTING CYLINDERS.
  - \* BOOM SWING SHALL BE A MINIMUM OF 180 DEGREES.
  - \* THE TELESCOPIC REACH SHALL BE A MINIMUM OF 3' FULLY EXTENDED.
  - \* THE MINIMUM REACH UP SHALL MEET 21'-10".
  - \* THE MINIMUM REACH OUT SHALL MEET 24' WITH TELESCOPIC SECTION FULLY EXTENDED.
  - \* THE MINIMUM REACH DOWN SHALL BE 14'-8" BELOW TRACTOR GROUND LEVEL.
  - \* BOOM MOWER HEAD SHALL HAVE THE ABILITY TO MOW HORIZONTALLY WITHIN 6" OF THE REAR TRACTOR TIRE.
- (NOTE: ALL MEASUREMENTS ARE BASED ON A 96" OUTSIDE TIRE SPREAD WITH 18.4 X 30 TIRES.)

OPERATION & POWER:

HYDRAULICS:

- \* THE UNIT SHALL FEATURE A SELF-CONTAINED CIRCUIT FOR BOTH MOWING HEAD AND BOOM CONTROL CIRCUIT.
- \* THE MOWING HEAD CIRCUIT SHALL FEATURE A CLOSED-LOOP HYDROSTATIC VARIABLE DISPLACEMENT PISTON PUMP RATED AT 134 HORSEPOWER.
- \* THE HYDROSTATIC PUMP SHALL PROVIDE A NO-FLOW NEUTRAL POSITION WHILE MOWING HEAD CIRCUIT IS "OFF".
- \* THE HYDROSTATIC PUMP SHALL FEATURE A CHARGE PUMP TO REFRESH AND COOL THE CUTTER CIRCUIT.
- \* BOOM CONTROL CIRCUIT SHALL FEATURE A LOAD-SENSING, VARIABLE DISPLACEMENT PISTON PUMP.
- \* THE SECONDARY CONTROL PUMP SHALL BE LOAD-SENSING AND RATED AT 76 HORSEPOWER.
- \* BOTH PUMPS SHALL PROVIDE INTERNAL RELIEF FOR COMPONENT PROTECTION.
- \* ALL HIGH-PRESSURE HYDRAULIC HOSES SHALL BE OF FOUR-WIRE BRAID CONSTRUCTION WITH A MINIMUM RATING OF SAE100R12.
- \* HYDRAULIC FLUID MUST BE OF A SUPERIOR GRADE WITH ANTI-WEAR ADDITIVES THAT CONFORM IS ISO AW VISCOSITY GRADE 100.

HYDRAULIC RESERVOIR:

- \* THE UNIT SHALL HAVE A FRONT MOUNTED HYDRAULIC RESERVOIR FOR IMPROVED OPERATOR VISIBILITY, SAFETY, AND OPERATOR ACCESS. (SIDE MOUNTED TANKS WILL NOT BE ACCEPTED.)

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- \* THE RESERVOIR SHALL FEATURE VISUAL INDICATION OF TANK LEVEL AND TEMPERATURE TO INSURE PROPER VOLUME LEVELS AND MAINTAINED IN ORDER TO SUPPORT MOTOR AND BOOM CONTROL CIRCUITS.
- \* CONVENIENTLY ACCESSED POINTS FOR DRAINING AND CLEANING OF RESERVOIR SHALL BE FEATURED.
- \* FRONTAL PROTECTION FOR THE RESERVOIR SHALL BE PROVIDED BY A HEAVY-DUTY STEEL BUMPER PLATE.
- \* A DURABLE, ONE-PIECE FORMED PLASTIC COVER, WITH FIBERGLASS BACKING, SHALL BE HINGED TO PROVIDE ACCESS TO COMPONENTS.

CYLINDER CONTROL VALVE:

- \* THE UNIT SHALL FEATURE A STACKABLE, MULTI-SECTION, ELECTRO-HYDRAULIC, DIRECTIONAL CONTROL VALVE.
- \* THE VALVE SHALL INCLUDE LOAD-SENSING AND SECTION SPECIFIC PRESSURE COMPENSATION.
- \* THE VALVE SHALL HAVE A MINIMUM WORKING PRESSURE OF 320 BAR AND MINIMUM FLOW OF 150 l/MIN.
- \* THE VALVE SHALL ALLOW A MINIMUM OF FOUR FUNCTIONS TO BE OPERATED SIMULTANEOUSLY.
- \* THE SWING LIFT, DIPPER, AND TELESCOPING SECTIONS FEATURE INDIVIDUAL WORK PORT RELIEF VALVES FOR INDIVIDUAL BREAKAWAY PROTECTION.
- \* THE CYLINDER VALVE SHALL BE PROTECTED FROM FALLING DEBRIS BY A COVER.

FILTRATION:

- \* THE UNIT SHALL FEATURE A HYDROSTAT CHARGE LOOP FILTER PROVIDING A MINIMUM OF ISO 4406 CLASS 18/13.
- \* THE UNIT SHALL ALSO FEATURE A HYDROSTAT CHARGE SUCTION FILTER PROVIDING A MINIMUM OF 100 MESH FILTRATION AT FULL FLOW.
- \* THE CONTROL VALVE FILTER SHALL PROVIDE A MINIMUM OF ISO 4406 CLASS 18/13.
- \* A SECONDARY CONTROL PUMP SUCTION FILTER SHALL BE FEATURED PROVIDING A MINIMUM OF 100 MESH FILTRATION AT FULL FLOW.
- \* HIGH PRESSURE FILTERS SHALL HAVE BYPASS INDICATION.

DRIVE SYSTEM:

- \* A TELESCOPIC DRIVELINE WITH GREASEABLE UNIVERSAL JOINTS SHALL BE FEATURED TO ACCOMMODATE INSTALLATION AND MAINTENANCE.
- \* THE DRIVELINE SHALL BE HARD MOUNTED TO ENGINE CRANKSHAFT AND SECURED TO PUMP SHAFT WITH DOUBLE-BOLT STYLE CLAMPING YOKE.
- \* STANDARD TUBE DIAMETER SHALL BE AT MAXIMUM 2" ROUND WITH 14-GAUGE WALL THICKNESS.
- \* ULTIMATE STRENGTH OF DRIVELINE SHALL BE 33,5742 INCH POUND OF TORQUE.
- \* A COVER SHALL BE FEATURED TO PROVIDE SHIELDING OF HIGH SPEED ROTATING PARTS.

COOLING UNIT:

- \* THE HYDRAULIC SYSTEM SHALL CONTAIN A SELF-CLEANING OIL-TO-AIR COOLER WITH ELECTRIC FAN.
- \* THE CONTROL FAN SHALL BE THERMOSTATICALLY CONTROLLED AND REVERSIBLE.

BOOM CONTROL:

- \* ALL VALVE FUNCTIONS ARE ELECTRONICALLY OPERATED BY MEANS OF A SINGLE JOYSTICK.
- \* A CAN BASED DATA ACQUISITION SYSTEM FOR INTERFACING OPERATOR AND INSTRUMENTATION INPUTS FOR OPTIMUM HYDRAULIC CONTROL SHALL BE FEATURED.
- \* THE CAN SYSTEM SHALL BE COMPRISED OF INPUT/OUTPUT MODULES, AN OPERATOR INTERFACE, AND INSTRUMENTATION.
- \* THE CAN SYSTEMS SHALL PROVIDE SELECTABLE PERFORMANCE MODES FOR OPERATOR CUSTOMIZATION.
- \* THE INTERFACE SHALL PROVIDE SYSTEM DIAGNOSTICS AND FAULT CODE MEMORY.

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- \* A MANUAL OVER-RIDE CONDITION FOR BOOM MOVEMENT SHALL BE FEATURED.

TRACTOR REQUIREMENTS:

- \* THE SUITABLE TRACTOR SHALL BE A MINIMUM OF 8,500 LBS AND FEATURE A MINIMUM HORSEPOWER RATING OF 90 HP.
- \* THE TRACTOR SHALL FEATURE A MINIMUM 90" WHEELBASE.
- \* THE TRACTOR SHALL FEATURE A MINIMUM 18" GROUND CLEARANCE.

OPERATOR PROTECTION & SAFETY:

- \* THE MOWER CUTTER HEAD SHALL HAVE A SIX-SECOND EMERGENCY SHUT DOWN ENGAGED BY THE OPERATOR FROM INSIDE THE TRACTOR CAB. THE BUTTON SHALL BE LOCATED WITHIN EASY REACH FOR COMPLETE POWER SHUT OFF OF MOTOR CIRCUIT.
- \* THE BOOM CONTROLS SHALL FEATURE A MASTER ON/OFF SWITCH FOR COMPLETE POWER SHUT DOWN.
- \* THE "ENABLE" FUNCTION SHALL BE INCORPORATED INTO CONTROLS TO PREVENT INCIDENTAL BOOM MOVEMENT.
- \* POLYCARBONATE (LEXAN) WINDOW PROTECTION SHALL BE OFFERED AS STANDARD ON CAB TRACTORS AS WELL AS ON ROPS TRACTOR VARIATIONS.

OPTIONAL CUTTING HEADS:

OPTION 1

60" HEAVY-DUTY ROTARY CUTTING HEAD:

- \* THE UNIT SHALL HAVE A MINIMUM CUTTING WIDTH OF 58".
- \* THE CENTER HEAD SHALL CUT GRASS, WEEDS, AND BRUSH UP TO 5" DIAMETER.
- \* THE CUTTING HEAD TOP DECK SHALL BE CONSTRUCTED USING A MINIMUM OF A606 ALLOY STEEL OR EQUIVALENT.
- \* THE SIDE SKIRTS SHALL BE CONSTRUCTED USING A MINIMUM OF 3/8" STEEL.
- \* TOP OF THE DECK SHALL BE REINFORCED WITH A CHANNED FRAME AND A REINFORCED SPINDLE MOUNT PLATE.
- \* THE CUTTING HEAD SHALL FEATURE FULL-LENGTH, REPLACEABLE SKID-SHOES.

SPINDLE:

- \* THE SPINDLE SHALL BE A MINIMUM OF 4-1/2" X 9" HEAT TREATED ALLOY TOOL STEEL.
- \* THE SPINDLE BEARING SHALL BE TAPERED ROLLER BEARINGS, 2-1/2" ID TOP AND 2-5/8" ID BOTTOM, IN A SEALED HOUSING.

BLADE CARRIER AND BLADES:

- \* THE BLADE CARRIER SHALL BE THREE LEAF, STACKED BLADE-BAR TYPE WITH THE BOTTOM LEAF BEING MADE OUT OF T-1 STEEL.
- \* THE BLADES SHALL BE 5/8" X 5" X 14-5/8", 360 DEGREES FULL SWINGING, DOUBLE-EDGED, AND CONSTRUCTED OF TEMPERED STEEL.

OPERATION & POWER

MOTOR:

- \* THE MOTOR SHALL BE A CAST-IRON, PISTON-TYPE, RATED AT 205HP AT 4,100 RPM AND 6,000 PSI.
- \* THE SPINDLE SPEED SHALL BE A MINIMUM OF 1,220 RPM AND 4,916 IN.LB. OR TORQUE.

MOTOR DRIVE:

- \* THE MOTOR DRIVE SHALL BE DIRECT DRIVE, SPLINED AND TOTALLY ENCLOSED. THIS SPECIFICALLY EXCLUDES A CHAIN OR DODGE COUPLER.

OPTION II

SAW BLADE TREE LIMB CUTTER:

- \* 26" DIAMETER BLADES, 3/16" THICK, 60 TEETH PER BLADE.
- \* TENSION ADJUSTABLE BELT.
- \* PRE-LOADED TAPERED ROLLER BEARINGS.
- \* 10 GAUGE REAR SAFETY SHIELD.
- \* CHOICE OF 2, 3, OR 4 BLADE.

OPTION III

FLAIL AXE CUTTER HEAD:

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- \* CUTTER HEAD WIDTH 49" MINIMUM.
- \* 2" ID MINIMUM DOUBLE ROW SHAFT BEARINGS.
- \* HYDRAULIC MOTOR, STEEL GEAR, 64 HP MINIMUM, 2,500 PRM, 2,500 PSI DOUBLE GROOVE BELTS.
- \* 32 OZ. HIGH STRENGTH BLADES.
- \* 5-1/2" DIAMETER, GREASEABLE REAR ROLLER.

\*\*\*\*\* SPECIFICATION 020E27 \*\*\*\*\*

EXTRA HEAVY DUTY ROTARY CUTTER, NEW LATEST MODEL 6 AND 7 FT. LIFT TYPE. SAFETY CHAINS FRONT AND REAR. CUTTERS TO BE ASSEMBLED AND READY FOR SERVICE WHEN DELIVERED.

CUTTING HEIGHT: 2" - 12"  
 CUTTING CAPACITY: THROUGH 4"  
 WIDTH OF CUT: 72" FOR 6', 84" FOR 7'  
 WEIGHT: 1,600 LBS. MIN. FOR 6' AND 2,200 LBS. FOR 7'  
 FRAME: 1 PC ARC WELD "X" TYPE BRACING TO EDGE OF TOP DECK. FRAME 1/4" X 3" X 3" SQ. TUBING.  
 TOP DECK: 1/4"  
 SIDE SKIRTS: DOUBLE 1/4" = 1/2"  
 SLIDES: 5/8" X 2-1/2" (SLIDES TO BE REPLACEABLE)  
 BLADES: ONE SET OF 2 HINGED, FREE SWINGING, HD SPRING STEEL 5/8" X 6"  
 BLADE HOLDER ASSEMBLY: HD ROUND TYPE. BLADE HOLDER TO BE 1" - 1-1/4" STEEL PLATE.  
 GEAR BOX: 145 HP MIN. MOUNTED ON 5/8" STEEL PLATE, HD OIL BATH LUBRICATED WITH STEEL CUT GEARS 540 RPM WITH HEAT TREATED SPLINED INPUT & OUTPUT SHAFTS.  
 #8 DRIVE SHAFT, HD UNIVERSAL ASSEMBLY WITH SPLINED YOKES ON BOTH ENDS. DRIVE SHAFT TO HAVE SHEAR PIN.  
 SLIP CLUTCH: SPRING LOADED WITH 36 SPECIAL BELLEVILLE SPRING WASHERS. WITH FOUR FIBROUS DISCS.  
 MINIMUM HP REQUIREMENTS: 50 FO 6' AND 60 FOR 7'  
 HITCH: THREE (3) POINT; HEAVY DUTY WITH TOP FLEX LINK.  
 SAFETY CHAINS: 5/16" (MOUNTED ON REMOVEABLE ROD).  
 TAIL WHEEL: SINGLE 5.00 X 8 LAMINATED ON 6', TWIN 5.00 X 8 LAMINATED ON 7'.

\*\*\*\*\* SPECIFICATION 020E28 \*\*\*\*\*

FLAIL MOWER:

MOWER - FLAIL MOWER UNITS SHALL BE TRACTOR MOUNTED AND SHALL MOW GRASS, WEEDS AND LIGHT BRUSH. THE UNIT SHALL HAVE THREE INDEPENDENT SECTIONS, ONE REAR SECTION AND TWO MID-MOUNTED WING SECTIONS. ATTACHMENT OF THE REAR UNIT TO THE TRACTOR SHALL BE VIA TRACTOR THREE POINT LIFT. HYDRAULIC SYSTEM: THE WING CUTTER SHALL BE POWERED BY HYDRAULIC PUMPS AND MOTOR SYSTEM THAT SHALL OPERATE INDEPENDENTLY AND SHALL NOT BE CONNECTED TO THE TRACTOR HYDRAULIC SYSTEM. POWER TO POSITION THE WING SECTION SHALL BE PROVIDED BY A HYDRAULIC CYLINDER SYSTEM. KNIVES: KNIVES SHALL BE REVERSIBLE, FREE SWINGING DESIGN, STYLE COURSE.

THE MOWER UNIT SHALL BE SO MOUNTED AS TO BE FREE TO "FLOAT" FOLLOWING THE CONTOURS OF THE GROUND, OR AT THE OPERATOR'S DISCRETION TO BE HELD AT VARYING HEIGHTS & ANGLES OF TILT ABOVE THE GROUND SO AS TO BE CAPABLE OF CUTTING OVER OBJECTS SOFT AREAS, WATER, VOIDS, ETC. WITHOUT THE NECESSITY OF MAINTAINING GROUND CONTACT FOR SUPPORT OF THE MOWER UNITS. THE REAR SECTION SHALL PRODUCE A MINIMUM OF 96 INCHES OF CUT, WITH POWER OF THE CUTTING BLADES PRODUCED BY THE TRACTORS POWER TAKE OFF SHAFT. THE WING SECTIONS SHALL BE CONTROLLED FROM THE OPERATOR'S POSITION WITH ELECTRIC AND MECHANICAL VALVES. A SAFETY SWITCH SHALL

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BE STANDARD FOR EACH WING SECTION.

TOTAL WIDTH OF SWATHE IN FLAT OUT POSITION SHALL BE APPROXIMATELY 19'. WITH WING SECTIONS RETRACTED TO TRANSPORT POSITION, THE UNIT WILL BE CAPABLE OF OPERATING IN A RIGHT OF WAY MINIMUM OF ONE HUNDRED INCHES. KNIVES SHALL BE 1-3/4" X 3-5/16", RING MOUNTED, IN PAIRS ON FORGED HEAT TREATED CLEVIS RINGS. KNIFE MATERIAL SHALL BE TEMPERED, HARDENED STEEL KNIFE ATTACHMENT: EACH PAIR OF KNIVES SHALL BE SECURED TO THE CUTTER SHAFT LUGS BY 7/16" X 5/16" HARDENED PINS AND 1/8" X 3/4" COTTER PINS OR 7/16" BOLT. EACH PAIR OF KNIVES SHALL BE MOUNTED IN A MANNER TO PROVIDE EASY REPLACEMENT OF EACH PAIR WITHOUT AFFECTING ANY OTHER KNIFE. CUTTER SHAFT: THE KNIFE SUPPORT SHAFT SHALL BE 6" I.D. MINIMUM DIAMETER DRAWN STEEL TUBE. THE ENDS OF EACH CUTTER SHAFT SHALL PROVIDE FOR ANTI-JAMMING TO PREVENT WIRE, ROPE, DEBRIS FROM WRAPPING ON THE SHAFT. THE CUTTER SHAFT END COVERS SHALL BE ATTACHED TO THE CUTTER SHAFT HOUSING. CUTTER SHAFT BEARINGS: THE CUTTER SHAFT SHALL BE SUPPORTED BY BEARINGS WITH 1-15/16" MINIMUM DIAMETER BORE. A MINIMUM OF TWO BEARINGS PER SHAFT WITH A LOAD RATING OF 1,650 LBS (MIN). GREASE FITTINGS SHALL BE PROVIDED TO ALLOW RELUBRICATION OF THE CUTTER SHAFT BEARINGS. CUTTER SHAFT BEARING HOUSING: BEARING HOUSING SHALL BE ATTACHED TO THE TWO SIDE SKIRTS OF THE CUTTER SHAFT HOUSING. THE BEARING HOUSING SHALL ENCLOSE THE BEARING TO PREVENT FOREIGN MATERIAL FROM DAMAGING BEARINGS.

BEARINGS GUARDS: THE CUTTER SHAFT HOUSING SHALL BE EQUIPPED WITH REPLACEABLE BUMPER GUARDS OVER EXPOSED SHAFT ENDS. DECK CONSTRUCTION: CUTTER SHAFT HOUSING SHALL BE A MINIMUM OF 1/8" STEEL (1/2" END PLATES) WITH A SWING CIRCUMFERENCE OF 58-1/2" MIN. SKID SHOES: SKID SHOES SHALL BE ATTACHED AT EACH END OF THE CUTTER HOUSING. WEAR PLATES SHALL BE REPLACEABLE. MINIMUM HEIGHT ADJUSTMENT: MINIMUM HEIGHT OF CUT SHALL BE 1/2" AND SHALL BE ADJUSTABLE TO 6". HEIGHT SHALL BE MAINTAINED BY A SIX INCH DIAMETER FULL SPAN ROLLER. THE ROLLER SHALL BE SUPPORTED BY BEARINGS WITH 1-3/8" MINIMUM DIAMETER BORE WITH A LOAD RATING OF ONE TON MINIMUM EACH, AT 5 MPH. A RECESSED GREASE FITTING SHALL BE PROVIDED AT EACH END OF THE ROLLER TO ALLOW RELUBRICATION OF THE REAR ROLLER BEARINGS. REAR SECTION POWER: THE REAR SECTION MOWER SHALL BE GEAR DRIVEN FROM THE TRACTOR 540 PTO SHAFT. THE DRIVE SHAFT SHALL BE A MINIMUM OF 35R. THE GEAR BOX SHALL BE A MINIMUM OF 90 CONTINUOUS HP. POWER SHALL BE TRANSMITTED FROM THE OUTPUT DRIVE SHAFT TO THE CUTTER SHAFT THROUGH A V-BELT(S). THE ENTIRE DRIVE SYSTEM SHALL BE SHIELDED.

WING SECTION POWER: POWER FOR WING UNITS SHALL BE PROVIDED BY HYDRAULIC PUMPS & MOTORS. THE PUMPS SHALL BE POWERED DIRECTLY BY THE TRACTOR ENGINE (FRONT MOUNT). HYDRAULIC HOSE WITH A SAFETY RATING OF 4 TO 1 SHALL BE USED TO ROUTE THE FLUID FROM PUMP TO MOTOR BACK TO THE OIL RESERVOIR. EACH HYDRAULIC SYSTEM SHALL BE PROTECTED BY A HYDRAULIC RELIEF VALVE. WING SECTION ATTACHMENT AND CONTROL: THE WING SECTIONS SHALL BE CONNECTED TO THE TRACTOR BY A LONGITUDINAL MEMBER FASTENED AT THE REAR AND FRONT OF THE TRACTOR. POSITION CONTROL FOR WINGS SHALL BE PROVIDED BY HYDRAULIC CYLINDERS PROVIDING A MINIMUM VERTICAL ARC OF 150 DEGREE UP. TILT CYLINDERS SHALL ALLOW CURB HEIGHT MOWING FROM STREET. POWER FOR POSITIONING CYLINDER SHALL BE HYDRAULIC. PRESSURE SAFETY FACTOR FOR THE CONTROL SYSTEM HOSES SHALL BE 4 TO 1. CONTROLS FOR THE POSITIONING CYLINDERS SHALL BE LOCATED WITHIN EASY REACH OF THE OPERATOR. EACH POSITION OF THE HYDRAULIC POSITIONING SYSTEM SHALL BE PROTECTED BY A HYDRAULIC RELIEF VALVE OR AN APPROVED EQUAL. THE HYDRAULIC POSITIONING VALVE SHALL HAVE A DETENT POSITION ALLOWING THE WING SECTION TO FOLLOW THE CONTOUR OF THE GROUND WITHOUT OPERATOR CONTROL. WING CUTTER SHAFT CONTROL VALVE: EACH WING CUTTER SHAFT SHALL BE CONTROLLED BY AN ELECTRIC SWITCH CONTROLLING AN ELECTRIC SOLENOID VALVE OR AN APPROVED EQUAL. THIS VALVE SHALL DIRECT THE FLOW OF THE HYDRAULIC FLUID FROM THE PUMP TO THE MOTOR (MIN. 67 HP) OR BACK TO THE HYDRAULIC TANK. HYDRAULIC PUMPS: THE PUMPS (MIN. 136 HP) FOR THE WING SECTIONS SHALL BE POWERED BY THE ENGINE CRANK SHAFT. THE

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RESERVOIR(S) SHALL BE EQUIPPED WITH A REPLACEABLE FILTER, TEMPERATURE GAUGE AND OIL QUANTITY INDICATOR. HYDRAULIC CAPACITY WILL BE A MINIMUM OF 35 GAL. HYDRAULIC SYSTEM SHALL OPERATE AT NO MORE THAN 3500 PSI AND PROVIDE A FLOW OF AT LEAST 25.6 GPM. NO LIVE HYDRAULICS IN CAB. DEFLECTOR CURTAIN: EACH MOWER SECTION SHALL BE EQUIPPED WITH A REPLACEABLE, FULL SPAN, REAR RUBBER/FABRIC CURTAIN TO PROVIDE DOWNWARD DEFLECTION OF DEBRIS. HYDRAULIC DRIVE PROTECTION: A HEAVY BUMPER SHALL BE PROVIDED. THIS BUMPER SHALL SERVE AS A COLLISION PROTECTION FOR THE HYDRAULIC DRIVE COMPONENTS.

VENDOR TO FURNISH TWO (2) SETS OF OPERATOR'S MANUALS, TWO (2) SETS OF PARTS AND SHOP MANUALS AND TWO (2) SETS OF WIRING DIAGRAMS AND LUBICATION CHARTS FOR TRACTOR AND MOWER. THE DELIVERED UNITS WILL INCLUDE: COMPLETE LUBRICATION. FILLING CRANKCASE WITH OIL. ADJUSTMENTS OF ENGINE TO PROPER OPERATING CONDITIONS, CAREFUL CHECK TO ASSURE PERFECT OPERATIONS OF ALL MECHANICAL FEATURES. CLEANING OF VEHICLE IF NECESSARY AND REMOVAL OF ALL UNNECESSARY TAGS, STICKERS, PAPERS, ETC.

END USER TO FURNISH TRACTOR APPROVED BY MOWER MANUFACTURER.



ATTACHMENTS

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INVITATION TO BID

\*\*\*\*\* MANDATORY PRE-BID CONFERENCE \*\*\*\*\*

THERE IS A MANDATORY PRE-BID CONFERENCE FOR THIS INVITATION TO BID.  
ALL VENDORS BIDDING ON THIS ITB MUST ATTEND THE MANDATORY PRE-BID  
CONFERENCE. VENDORS WILL BE REQUIRED TO SIGN-IN AT THE MANDATORY PRE-  
BID CONFERENCE AS PROOF OF ATTENDANCE. ONLY THOSE VENDORS THAT ARE  
SIGNED-IN AS ATTENDING THE CONFERENCE WILL BE ALLOW TO PARTICIPATE IN  
THE BID PROCESS FOR THIS ITB. ANY BID RECEIVED FROM VENDORS THAT DID  
NOT ATTEND THE MANDATORY PRE-BID CONFERENCE WILL BE REJECTED.

MANDATORY PRE-BID CONFERENCE PLACE/DATE/TIME

PLACE: STATE OF ALABAMA/PURCHASING DIVISION  
100 N. UNION STREET, SUITE 192  
MONTGOMERY, AL 36104  
DATE: MAY 27, 2010  
TIME: 9:00 AM

\*\*\*\*\* NOTE TO ALL VENDORS \*\*\*\*\*

PLEASE NOTE THE EXACT BID COPY REQUIREMENT ON PAGE 2 ITEM NUMBER 7.  
PLEASE NOTE THAT FAILURE TO SUBMIT THE REQUIRED BID COPY WILL RESULT  
IN THE REJECTION OF YOUR BID. IN ADDITION TO THE ONE (1) REQUIRED  
BIDY COPY, VENDORS WILL BE ASKED TO PROVIDE ADDITIONAL BID COPIES AT  
THE ABOVE MANDATORY PRE-BID CONFERENCE. THE NUMBER OF COPIES VENDORS  
WILL BE ASKED TO PROVIDE WILL DEPEND ON THE NUMBER OF VENDORS THAT  
SAY THEY WILL ATTEND THE BID OPENING.

\*\*\*\*\*

ALL VENDORS BIDDING ON THIS ITB ARE ENCOURAGED TO READ THIS ENTIRE BID  
DOCUMENT AND FOLLOW ALL THE INSTRUCTIONS. FAILURE TO READ THIS BID  
DOCUMENT AND FOLLOW ALL THE INSTRUCTIONS MAY RESULT IN THE REJECTION  
OF YOUR BID.

PRICE SHEET

INVITATION TO BID

VENDOR NAME:

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LINE NO	DESCRIPTION / BRAND NAME	RECYCLE /ENERGY	QUANTITY	UNIT	MFR NAME	STOCK NUMBER	STATE USE ONLY	UNIT PRICE	STATE USE ONLY
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UNLESS SPECIFIED OTHERWISE BELOW:  
SHIP TO: R1 /  
STATEWIDE

----- BEGIN GROUPING LINES: 00001 -----									
00001	COMMODITY CODE: 020-65-067948 CUTTER, ROTARY 10' WITH STANDARD COUNTER WEIGHT PER SPECIFICATION 020E02	---	1	EA	_____	_____	_____	_____	_____
00002	COMMODITY CODE: 020-65-089713 CUTTER, ROTARY 15' PER SPECIFICATION 020E02	---	1	EA	_____	_____	_____	_____	_____
00003	COMMODITY CODE: 020-65-067949 CUTTER, ROTARY 15" AUTOMOBILE/TRUCK TIRES PER SPECIFICATION 020E02.	---	1	EA	_____	_____	_____	_____	_____
00004	COMMODITY CODE: 020-65-067950 CUTTER, ROTARY 22 PLY AIRCRAFT TIRES PER SPECIFICATION 020E02.	---	1	EA	_____	_____	_____	_____	_____
00005	COMMODITY CODE: 020-65-089694 REPAIR/REPLACEMENT PARTS NOT LISTED TO BE FURNISHED AT PUBLISHED LIST PRICE LESS _____%	---	1	EA	_____	_____	_____	_____	_____
-----END GROUPING LINES: 00001 - 00005 -----								GROUP TOTAL	_____
----- BEGIN GROUPING LINES: 00006 -----									
00006	COMMODITY CODE: 020-65-067951 CUTTER, ROTARY 10' WITH STANDARD COUNTER WEIGHT PER SPECIFICATION 020E03	---	1	EA	_____	_____	_____	_____	_____

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LINE NO	DESCRIPTION / BRAND NAME	RECYCLE / ENERGY	QUANTITY	UNIT	MFR NAME	STOCK NUMBER	STATE USE ONLY	UNIT PRICE	STATE USE ONLY
00007	COMMODITY CODE: 020-65-089714 CUTTER, ROTARY 15' PER SPECIFICATION 020E03	---	1	EA	---	---	---	---	---
00008	COMMODITY CODE: 020-65-067952 CUTTER, ROTARY 15" AUTOMOTIVE/TRUCK TIRE PER SPECIFICATION 020E03.	---	1	EA	---	---	---	---	---
00009	COMMODITY CODE: 020-65-067953 CUTTER, ROTARY 22 PLY AIRCRAFT TIRES PER SPECIFICATION 020E03.	---	1	EA	---	---	---	---	---
00010	COMMODITY CODE: 020-65-089694 REPAIR/REPLACEMENT PARTS NOT LISTED TO BE FURNISHED AT PUBLISHED LIST PRICE LESS _____%	---	1	EA	---	---	---	---	---
-----END GROUPING LINES: 00006 - 00010 -----								GROUP TOTAL	---
----- BEGIN GROUPING LINES: 00011 -----									
00011	COMMODITY CODE: 020-65-067987 CUTTER, ROTARY 10' WITH STANDARD COUNTER WEIGHT PER SPECIFICATION 020E04	---	1	EA	---	---	---	---	---
00012	COMMODITY CODE: 020-65-089715 CUTTER, ROTARY 15' PER SPECIFICATION 020E04	---	1	EA	---	---	---	---	---
00013	COMMODITY CODE: 020-65-067988 CUTTER, ROTARY 22 PLY AIRCRAFT TIRES PER SPECIFICATION 020E04.	---	1	EA	---	---	---	---	---
00014	COMMODITY CODE: 020-65-067989 HITCH, CAPTIVE BALL FOR CUTTER PER SPECIFICATION 020E04.	---	1	EA	---	---	---	---	---
00015	COMMODITY CODE: 020-65-067990 HITCH, PINTLE HOOK FOR CUTTER PER	---	1	EA	---	---	---	---	---
PAGE TOTAL									

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LINE NO	DESCRIPTION / BRAND NAME	RECYCLE / ENERGY	QUANTITY	UNIT	MFR NAME	STOCK NUMBER	STATE USE ONLY	UNIT PRICE	STATE USE ONLY
	SPECIFICATION 020E04.								
00016	COMMODITY CODE: 020-65-089694 REPAIR/REPLACEMENT PARTS NOT LISTED TO BE FURNISHED AT PUBLISHED LIST PRICE LESS _____%	---	1	EA	-----	-----	-----	-----	-----
-----END GROUPING LINES: 00011 - 00016 -----								GROUP TOTAL	-----
----- BEGIN GROUPING LINES: 00017 -----									
00017	COMMODITY CODE: 020-65-074926 CUTTER, ROTARY WITH ONE WING SECTION DELETED PER SPECIFICATION 020E04.	---	1	EA	-----	-----	-----	-----	-----
00018	COMMODITY CODE: 020-65-075209 CUTTER, ROTARY WITH 22 PLY AIRCRAFT TIRES AND WITH ONE WING SECTION DELETED PER SPECIFICATION 020E04.	---	1	EA	-----	-----	-----	-----	-----
00019	COMMODITY CODE: 020-65-089694 REPAIR/REPLACEMENT PARTS NOT LISTED TO BE FURNISHED AT PUBLISHED LIST PRICE LESS _____%	---	1	EA	-----	-----	-----	-----	-----
-----END GROUPING LINES: 00017 - 00019 -----								GROUP TOTAL	-----
00020	COMMODITY CODE: 020-65-067991 CUTTER, ROTARY 5 FT. SPAN PER SPECIFICA- TION 020E05.	---	1	EA	-----	-----	-----	-----	-----
00021	COMMODITY CODE: 020-65-067992 CUTTER, ROTARY 6 FT. SPAN PER SPECIFICA- TION 020E05.	---	1	EA	-----	-----	-----	-----	-----
00022	COMMODITY CODE: 020-65-067993 CUTTER, ROTARY PER SPECIFICATION 020E06	---	1	EA	-----	-----	-----	-----	-----

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LINE NO	DESCRIPTION / BRAND NAME	RECYCLE / ENERGY	QUANTITY	UNIT	MFR NAME	STOCK NUMBER	STATE USE ONLY	UNIT PRICE	STATE USE ONLY
00023	COMMODITY CODE: 020-65-089694 REPAIR/REPLACEMENT PARTS NOT LISTED TO BE FURNISHED AT PUBLISHED LIST PRICE LESS _____%	---	1	EA	-----	-----	-----	-----	-----
----- BEGIN GROUPING LINES: 00024 -----									
00024	COMMODITY CODE: 020-65-067995 CUTTER, ROTARY PER SPECIFICATION 020E08	---	1	EA	-----	-----	-----	-----	-----
00025	COMMODITY CODE: 020-65-085525 CUTTER, ROTARY PER SPECIFICATION 020E08 WITH AIRCRAFT TIRES.	---	1	EA	-----	-----	-----	-----	-----
00026	COMMODITY CODE: 020-65-089694 REPAIR/REPLACEMENT PARTS NOT LISTED TO BE FURNISHED AT PUBLISHED LIST PRICE LESS _____%	---	1	EA	-----	-----	-----	-----	-----
-----END GROUPING LINES: 00024 - 00026 -----								GROUP TOTAL	-----
----- BEGIN GROUPING LINES: 00027 -----									
00027	COMMODITY CODE: 020-65-067997 CUTTER, FLAIL 57"-62" CUTTING WIDTH PER SPECIFICATION 020E09.	---	1	EA	-----	-----	-----	-----	-----
00028	COMMODITY CODE: 020-65-085526 CUTTER, FLAIL 57"-62" CUTTING WIDTH PER SPECIFICATION 020E09 TO INCLUDE OFFSET MOUNTING.	---	1	EA	-----	-----	-----	-----	-----
00029	COMMODITY CODE: 020-65-089694 REPAIR/REPLACEMENT PARTS NOT LISTED TO BE FURNISHED AT PUBLISHED LIST PRICE LESS _____%	---	1	EA	-----	-----	-----	-----	-----

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LINE NO	DESCRIPTION / BRAND NAME	RECYCLE / ENERGY	QUANTITY	UNIT	MFR NAME	STOCK NUMBER	STATE USE ONLY	UNIT PRICE	STATE USE ONLY
00030	COMMODITY CODE: 020-65-091807 OPTIONAL EQUIPMENT NOT LISTED TO BE FURNISHED AT PUBLISHED LIST PRICE LESS _____ % DISCOUNT.	---	1	EA	---	---	---	---	---
-----END GROUPING LINES: 00027 - 00030 -----								GROUP TOTAL	---
----- BEGIN GROUPING LINES: 00031 -----									
00031	COMMODITY CODE: 020-65-067998 CUTTER, FLAIL 68"-74" CUTTING WIDTH PER SPECIFICATION 020E09.	---	1	EA	---	---	---	---	---
00032	COMMODITY CODE: 020-65-085527 CUTTER, FLAIL 68"-74" CUTTING WIDTH PER SPECIFICATION 020E09 WITH OFFSET MOUNTING.	---	1	EA	---	---	---	---	---
00033	COMMODITY CODE: 020-65-089694 REPAIR/REPLACEMENT PARTS NOT LISTED TO BE FURNISHED AT PUBLISHED LIST PRICE LESS _____ %	---	1	EA	---	---	---	---	---
00034	COMMODITY CODE: 020-65-091807 OPTIONAL EQUIPMENT NOT LISTED TO BE FURNISHED AT PUBLISHED LIST PRICE LESS _____ % DISCOUNT.	---	1	EA	---	---	---	---	---
-----END GROUPING LINES: 00031 - 00034 -----								GROUP TOTAL	---
----- BEGIN GROUPING LINES: 00035 -----									
00035	COMMODITY CODE: 020-65-067999 CUTTER, FLAIL 88" CUTTING WIDTH PER SPECIFICATION 020E09.	---	1	EA	---	---	---	---	---
PAGE TOTAL									

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LINE NO	DESCRIPTION / BRAND NAME	RECYCLE /ENERGY	QUANTITY	UNIT	MFR NAME	STOCK NUMBER	STATE USE ONLY	UNIT PRICE	STATE USE ONLY
00036	COMMODITY CODE: 020-65-085528 CUTTER, FLAIL 88" CUTTING WIDTH PER SPECIFICATION 020E09 WITH OFFSET MOUNTING.	—	1	EA	—	—	—	—	—
00037	COMMODITY CODE: 020-65-089694 REPAIR/REPLACEMENT PARTS NOT LISTED TO BE FURNISHED AT PUBLISHED LIST PRICE LESS _____%	—	1	EA	—	—	—	—	—
00038	COMMODITY CODE: 020-65-091807 OPTIONAL EQUIPMENT NOT LISTED TO BE FURNISHED AT PUBLISHED LIST PRICE LESS _____ % DISCOUNT.	—	1	EA	—	—	—	—	—
-----END GROUPING LINES: 00035 - 00038 ----								GROUP TOTAL	—
----- BEGIN GROUPING LINES: 00039 -----									—
00039	COMMODITY CODE: 020-15-066567 MOWER, FLAIL PER SPECIFICATION 020E10.	—	1	EA	—	—	—	—	—
00040	COMMODITY CODE: 020-15-083189 MOWER, FLAIL WITH TRACTOR PER SPECIFICA- TION 020E11.	—	1	EA	—	—	—	—	—
00041	COMMODITY CODE: 020-65-089694 REPAIR/REPLACEMENT PARTS NOT LISTED TO BE FURNISHED AT PUBLISHED LIST PRICE LESS _____%	—	1	EA	—	—	—	—	—
00042	COMMODITY CODE: 020-65-091807 OPTIONAL EQUIPMENT NOT LISTED TO BE FURNISHED AT PUBLISHED LIST PRICE LESS	—	1	EA	—	—	—	—	—

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LINE NO	DESCRIPTION / BRAND NAME	RECYCLE /ENERGY	QUANTITY	UNIT	MFR NAME	STOCK NUMBER	STATE USE ONLY	UNIT PRICE	STATE USE ONLY
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\_\_\_\_\_ % DISCOUNT.

-----END GROUPING LINES: 00039 - 00042 ----- GROUP TOTAL \_\_\_\_\_

----- BEGIN GROUPING LINES: 00043 -----

00043	COMMODITY CODE: 020-15-086690 CUTTER, BOOM MOWER WITHOUT HEAD PER SPECIFICATION 020E16.	_____	1	EA	_____	_____	_____	_____	_____
00044	COMMODITY CODE: 022-15-086689 CUTTER, TREE LIMB SAW BLADE, HEAD ONLY PER SPECIFICATION 020E16 (STANDARD HEAD)	_____	1	EA	_____	_____	_____	_____	_____
00045	COMMODITY CODE: 022-15-086691 CUTTER, TREE LIMB SICKLE BAR, HEAD ONLY PER SPECIFICATION 020E16 (OPTION 1)	_____	1	EA	_____	_____	_____	_____	_____
00046	COMMODITY CODE: 022-15-086692 CUTTER, FLAIL AXE, HEAD ONLY PER SPECI- FICATION 020E16 (OPTION 2)	_____	1	EA	_____	_____	_____	_____	_____
00047	COMMODITY CODE: 022-15-086693 CUTTER, ROTARY, HEAD ONLY PER SPECIFICA- TION 020E16 (OPTION 3)	_____	1	EA	_____	_____	_____	_____	_____
00048	COMMODITY CODE: 020-65-089694 REPAIR/REPLACEMENT PARTS NOT LISTED TO BE FURNISHED AT PUBLISHED LIST PRICE LESS _____%	_____	1	EA	_____	_____	_____	_____	_____
00049	COMMODITY CODE: 020-65-091807 OPTIONAL EQUIPMENT NOT LISTED TO BE FURNISHED AT PUBLISHED LIST PRICE LESS _____ % DISCOUNT.	_____	1	EA	_____	_____	_____	_____	_____

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LINE NO	DESCRIPTION / BRAND NAME	RECYCLE /ENERGY	QUANTITY	UNIT	MFR NAME	STOCK NUMBER	STATE USE ONLY	UNIT PRICE	STATE USE ONLY
-----END GROUPING LINES: 00043 - 00049 -----									GROUP TOTAL
----- BEGIN GROUPING LINES: 00050 -----									
00050	COMMODITY CODE: 020-15-087545 CUTTER, BOOM MOWER WITHOUT HEAD PER SPECIFICATION 020E18  BRAND: _____MODEL#: _____	---	1	EA	_____	_____	_____	_____	_____
00051	COMMODITY CODE: 020-65-089686 50" ROTARY BOOM MOWER HEAD PER SPECIFICATION 020E18  BRAND: _____MODEL#: _____	---	1	EA	_____	_____	_____	_____	_____
00052	COMMODITY CODE: 020-65-087546 50" ROTARY BOOM MOWER HEAD WITH INTER- CHANGEABLE SAW BLADE PER SPEC. 020E18  BRAND: _____MODEL#: _____	---	1	EA	_____	_____	_____	_____	_____
00053	COMMODITY CODE: 020-65-087548 60" ROTARY MOWER HEAD PER SPEC. 020E18  BRAND: _____MODEL#: _____	---	1	EA	_____	_____	_____	_____	_____
00054	COMMODITY CODE: 022-15-087549 63" FLAIL MOWER HEAD PER SPEC. 020E18  BRAND: _____MODEL#: _____	---	1	EA	_____	_____	_____	_____	_____
00055	COMMODITY CODE: 020-65-087550 22" ROTARY BOOM DITCHER PER SPEC. 020E18  BRAND: _____MODEL#: _____	---	1	EA	_____	_____	_____	_____	_____

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LINE NO	DESCRIPTION / BRAND NAME	RECYCLE /ENERGY	QUANTITY	UNIT	MFR NAME	STOCK NUMBER	STATE USE ONLY	UNIT PRICE	STATE USE ONLY
00056	COMMODITY CODE: 020-15-087574 OPTIONAL EQUIPMENT NOT LISTED TO BE FURNISHED AT PUBLISHED LIST PRICE LESS _____%	---	1	EA	_____	_____	_____	_____	_____
00057	COMMODITY CODE: 020-15-089687 REPAIR/REPLACEMENT PARTS NOT LISTED TO BE FURNISHED AT PUBLISHED LIST PRICE LESS _____%	---	1	EA	_____	_____	_____	_____	_____
-----END GROUPING LINES: 00050 - 00057 -----									GROUP TOTAL _____
----- BEGIN GROUPING LINES: 00058 -----									-----
00058	COMMODITY CODE: 020-15-087551 20'6" ARTICULATING BOOM MOWER, MOWING HEIGHT 18'6" WITH ROTARY CUTTER HEAD ASSEMBLY PER SPECIFICATION 020E19  BRAND: _____MODEL#: _____	---	1	EA	_____	_____	_____	_____	_____
00059	COMMODITY CODE: 020-15-087552 23' ARTICULATING BOOM MOWER, MOWING HEIGHT 20'5" WITH ROTARY CUTTER HEAD ASSEMBLY PER SPECIFICATION 020E19  BRAND: _____MODEL#: _____	---	1	EA	_____	_____	_____	_____	_____
00060	COMMODITY CODE: 020-15-087553 25' ARTICULATING BOOM MOWER, MOWING HEIGHT 22'6" WITH ROTARY CUTTER HEAD ASSEMBLY, PER SPECIFICATION 020E19.  BRAND: _____MODEL#: _____	---	1	EA	_____	_____	_____	_____	_____
00061	COMMODITY CODE: 020-65-087554 MANUFACTURER'S STANDARD 60" ROTARY MOWER HEAD FOR BOOM MOWER PER SPEC.	---	1	EA	_____	_____	_____	_____	_____

PAGE TOTAL \_\_\_\_\_

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LINE NO	DESCRIPTION / BRAND NAME	RECYCLE /ENERGY	QUANTITY	UNIT	MFR NAME	STOCK NUMBER	STATE USE ONLY	UNIT PRICE	STATE USE ONLY
	020E19								
	BRAND: _____MODEL#: _____								
00062	COMMODITY CODE: 022-15-087555 MANUFACTURER'S STANDARD 50" FLAIL MOWER HEAD FOR BOOM MOWER PER SPEC. 020E19	_____	1	EA	_____	_____	_____	_____	_____
	BRAND: _____MODEL#: _____								
00063	COMMODITY CODE: 020-15-089688 MANUFACTURER'S STANDARD 22" DITCHER HEAD ASSEMBLY FOR BOOM MOWER PER SPEC 020E19	_____	1	EA	_____	_____	_____	_____	_____
	BRAND: _____MODEL: _____								
00064	COMMODITY CODE: 020-15-089689 MANUFACTURER'S STANDARD 48" SAW BLADE (FOR 50" ROTARY HEAD ONLY) FOR BOOM MOWER PER SPEC 020E19	_____	1	EA	_____	_____	_____	_____	_____
	BRAND: _____MODEL: _____								
00065	COMMODITY CODE: 020-15-089690 MANUFACTURER'S STANDARD 63" GRASS FLAIL MOWER HEAD FOR BOOM MOWER PER SPEC 020E19	_____	1	EA	_____	_____	_____	_____	_____
	BRAND: _____MODEL#: _____								
00066	COMMODITY CODE: 020-15-089691 DEDUCT 50" STANDARD ROTARY HEAD	_____	1	EA	_____	_____	_____	_____	_____
00067	COMMODITY CODE: 020-15-089692 OPTIONAL EQUIPMENT NOT LISTED TO BE FURNISHED AT PUBLISHED LIST PRICE LESS _____%	_____	1	EA	_____	_____	_____	_____	_____

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LINE NO	DESCRIPTION / BRAND NAME	RECYCLE /ENERGY	QUANTITY	UNIT	MFR NAME	STOCK NUMBER	STATE USE ONLY	UNIT PRICE	STATE USE ONLY
00068	COMMODITY CODE: 020-15-089693 REPAIR/REPLACEMENT PARTS NOT LISTED TO BE FURNISHED AT PUBLISHED PRICE LESS _____ %	_____	1	EA	_____	_____	_____	_____	_____
-----END GROUPING LINES: 00058 - 00068 -----								GROUP TOTAL	_____
----- BEGIN GROUPING LINES: 00069 -----									
00069	COMMODITY CODE: 020-15-087556 20'6" ARTICULATING BOOM MOWER, MOWING HEIGHT 18'6" PER SPECIFICATION 020E20  BRAND: _____ MODEL#: _____	_____	1	EA	_____	_____	_____	_____	_____
00070	COMMODITY CODE: 020-15-087557 23' ARTICULATING BOOM MOWER PER SPEC. 020E20  BRAND: _____ MODEL#: _____	_____	1	EA	_____	_____	_____	_____	_____
00071	COMMODITY CODE: 020-15-087558 25' ARTICULATING BOOM MOWER PER SPEC. 020E20  BRAND: _____ MODEL#: _____	_____	1	EA	_____	_____	_____	_____	_____
00072	COMMODITY CODE: 020-65-087577 MANUFACTURER'S STANDARD 60" ROTARY MOWER HEAD FOR BOOM MOWER PER SPEC. 020E20  BRAND: _____ MODEL#: _____	_____	1	EA	_____	_____	_____	_____	_____
00073	COMMODITY CODE: 020-15-087560 MANUFACTURER'S STANDARD 50" FLAIL MOWER HEAD FOR BOOM MOWER PER SPEC. 020E20  BRAND: _____ MODEL#: _____	_____	1	EA	_____	_____	_____	_____	_____

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LINE NO	DESCRIPTION / BRAND NAME	RECYCLE /ENERGY	QUANTITY	UNIT	MFR NAME	STOCK NUMBER	STATE USE ONLY	UNIT PRICE	STATE USE ONLY
00074	COMMODITY CODE: 020-65-089695 MANUFACTURER'S STANDARD 50" ROTARY MOWER HEAD FOR BOOM MOWER PER SPEC 020E20  BRAND: _____MODEL#: _____	____	1	EA	_____	_____	_____	_____	_____
00075	COMMODITY CODE: 020-65-089696 MANUFACTURER'S STANDARD 48" INTER- CHANGEABLE 48" SAW BLADE FOR 50" ROTARY MOWER HEAD FOR BOOM MOWER PER SPEC 020E20  BRAND: _____MODEL#: _____	____	1	EA	_____	_____	_____	_____	_____
00076	COMMODITY CODE: 020-65-089697 MANUFACTURER'S STANDARD 63" FLAIL MOWER HEAD FOR BOOM MOWER PER SPEC 020E20  BRAND: _____MODEL#: _____	____	1	EA	_____	_____	_____	_____	_____
00077	COMMODITY CODE: 020-65-089698 MANUFACTURER'S STANDARD TRIPLE SAW BLADE HEAD (24" BLADES) FOR BOOM MOWER PER SPEC 020E20  BRAND: _____MODEL#: _____	____	1	EA	_____	_____	_____	_____	_____
00078	COMMODITY CODE: 020-65-089699 MANUFACTURER'S STANDARD 22" DITCHER HEAD FOR BOOM MOWER PER SPEC 020E20  BRAND: _____MODEL#: _____	____	1	EA	_____	_____	_____	_____	_____
00079	COMMODITY CODE: 020-65-089700 MANUFACTURER'S STANDARD WET BLADE SYSTEM FOR MOWER HEADS FOR BOOM MOWER PER SPEC 020E20	____	1	EA	_____	_____	_____	_____	_____

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	BRAND: _____ MODEL#: _____								
00080	COMMODITY CODE: 020-65-089694 REPAIR/REPLACEMENT PARTS NOT LISTED TO BE FURNISHED AT PUBLISHED LIST PRICE LESS _____%	_____	1	EA	_____	_____	_____	_____	_____
00081	COMMODITY CODE: 020-65-091807 OPTIONAL EQUIPMENT NOT LISTED TO BE FURNISHED AT PUBLISHED LIST PRICE LESS _____ % DISCOUNT.	_____	1	EA	_____	_____	_____	_____	_____
-----END GROUPING LINES: 00069 - 00081 -----								GROUP TOTAL	_____
----- BEGIN GROUPING LINES: 00082 -----									
00082	COMMODITY CODE: 020-15-087563 20' TO 24' TELESCOPIC ARTICULATING BOOM MOWER PER SPEC 020E21  BRAND: _____ MODEL#: _____	_____	1	EA	_____	_____	_____	_____	_____
00083	COMMODITY CODE: 020-65-087564 MANUFACTURER'S STANDARD 60" ROTARY BOOM MOWER WITH INTERCHANGEABLE 48" SAW BLADE PER SPEC. 020E21  BRAND: _____ MODEL#: _____	_____	1	EA	_____	_____	_____	_____	_____
00084	COMMODITY CODE: 020-65-087565 MANUFACTURER'S STANDARD SAW BLADE TREE LIMB CLIMBER (2, 3, OR 4 BLADE TO BE SPECIFIED WITH ORDER) MOWER HEAD FOR BOOM MOWER PER SPEC 020E21  BRAND: _____ MODEL#: _____	_____	1	EA	_____	_____	_____	_____	_____
PAGE TOTAL									

VENDOR NAME :

VENDOR NO : -  
ITB NO. : 10-X-2218012  
OPEN DATE : 06/15/10 TIME: 10:00 AM  
T-NUMBER : T226  
RETURN DATE: 06/14/10 TIME: 5:00 PM

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LINE NO	DESCRIPTION / BRAND NAME	RECYCLE /ENERGY	QUANTITY	UNIT	MFR NAME	STOCK NUMBER	STATE USE ONLY	UNIT PRICE	STATE USE ONLY
00085	COMMODITY CODE: 020-15-087566 MANUFACTURER'S STANDARD MIN. 49" FLAIL AXE CUTTER HEAD FOR BOOM MOWER PER SPEC 020E21  BRAND: _____ MODEL#: _____	---	1	EA	_____	_____	_____	_____	_____
00086	COMMODITY CODE: 020-65-091810 MOWER, BOOM, 26' TO 30' TELESCOPIC ARTICULATING BOOM, PER SPEC 020E21.  MFR _____ MODEL _____	---	1	EA	_____	_____	_____	_____	_____
00087	COMMODITY CODE: 020-65-089694 REPAIR/REPLACEMENT PARTS NOT LISTED TO BE FURNISHED AT PUBLISHED LIST PRICE LESS _____ %	---	1	EA	_____	_____	_____	_____	_____
00088	COMMODITY CODE: 020-65-091807 OPTIONAL EQUIPMENT NOT LISTED TO BE FURNISHED AT PUBLISHED LIST PRICE LESS  _____ % DISCOUNT.	---	1	EA	_____	_____	_____	_____	_____
-----END GROUPING LINES: 00082 - 00088 ----								GROUP TOTAL	_____
----- BEGIN GROUPING LINES: 00093 -----									
00093	COMMODITY CODE: 020-65-087736 CUTTER, ROTARY 6 FT. SPAN PER SPECIFICATION 020E27	---	1	EA	_____	_____	_____	_____	_____
00094	COMMODITY CODE: 020-65-087737 CUTTER, ROTARY, 7 FT. SPAN PER SPECIFICATION 020E27	---	1	EA	_____	_____	_____	_____	_____

PAGE TOTAL

PRICE SHEET

INVITATION TO BID

VENDOR NAME:

VENDOR NO : -  
ITB NO. : 10-X-2218012  
OPEN DATE : 06/15/10 TIME: 10:00 AM  
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RETURN DATE: 06/14/10 TIME: 5:00 PM

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LINE NO	DESCRIPTION / BRAND NAME	RECYCLE /ENERGY	QUANTITY	UNIT	MFR NAME	STOCK NUMBER	STATE USE ONLY	UNIT PRICE	STATE USE ONLY
00095	COMMODITY CODE: 020-65-089694 REPAIR/REPLACEMENT PARTS NOT LISTED TO BE FURNISHED AT PUBLISHED LIST PRICE LESS _____%	_____	1	EA	_____	_____	_____	_____	_____
-----END GROUPING LINES: 00093 - 00095 -----								GROUP TOTAL	_____
----- BEGIN GROUPING LINES: 00096 -----									
00096	COMMODITY CODE: 020-65-087738 MOWER, FLAIL PER SPECIFICATION 020E28.	_____	1	EA	_____	_____	_____	_____	_____
00097	COMMODITY CODE: 020-65-089701 OPTIONAL EQUIPMENT NOT OTHERWISE LISTED UNDER SPECIFICATION 020E28 TO BE FURNISHED AT PUBLISHED LIST PRICE LESS _____%	_____	1	EA	_____	_____	_____	_____	_____
-----END GROUPING LINES: 00096 - 00097 -----								GROUP TOTAL	_____
00099	COMMODITY CODE: 020-65-089702 MOWER, TRIPLE GANG FLAIL WITHOUT TRACTOR PER SPECIFICATION 020E28  BRAND: _____ MODEL#: _____	_____	1	EA	_____	_____	_____	_____	_____

PAGE TOTAL \_\_\_\_\_  
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